Tuesday 28 June 09.30–10.45
Imaging: New Uses, New Users
Chairmen: B. Ellis and D. Rickards

14

Incidental or additional diagnoses on unenhanced helical computed tomography for suspected renal colic: experience with 2033 examinations

M.H. ATHER, K. FAIZULLAH and M.N. SUALIMAN
Aga Khan University, Karachi, Pakistan

INTRODUCTION

This study was conducted to determine the incidence and spectrum of significant alternative or additional diagnoses on unenhanced helical computed tomography (CT) in a large series of patients with suspected renal colic.

METHOD

2033 UHCT were performed from 2001 to mid-2004 for suspected renal colic. All official CT reports were retrospectively reviewed and radiological diagnoses of clinical entities not suspected otherwise were analyzed. All other relevant radiological, biochemical and serological investigations and per-operative findings were also noted.

RESULTS

Ureteral calculi were identified on 1601 examinations (78.7%) while 318 (15.6%) were unremarkable. An alternative or additional diagnosis was established or suggested on 170 examinations (8.4%), including 26 patients with concurrent ureteral calculi. There were 104 genitourinary and 66 non genitourinary tract diagnoses. The most common incidental finding was simple renal cyst (19.7%), followed by cholelithiasis (13.4%) and appendicitis (10.6%).

CONCLUSIONS

A wide spectrum of significant, alternative and/or additional genitourinary and non-genitourinary diagnoses on unenhanced helical CT performed for suspected renal colic. In our series of 2033 CT examinations, the incidence of incidental diagnosis was 8.4%.

15

The role of C-T Virtual Ureteropyeloscopy in the diagnosis of upper urinary tract TCC

K. POLYZOIS, A. ENGLAND, P.N. RAO, P. DOWNEY, A.J. BRADLEY and J.S. TUCK
South Manchester University Hospitals NHS Trust, Wythenshawe Hospital, Wythenshawe, Manchester, UK

INTRODUCTION

C-T Virtual Ureteropyeloscopy (CTVU) is an interactive 3-D image acquired by helical C-T. We aim to demonstrate this technique's usefulness in assessing the ureteric and pelvic TCC.

PATIENTS AND METHODS

During 2004, 11 patients underwent CTVU in our institution (9 with suspected ureteric or renal pelvic carcinomas and 2 as follow up subsequent to previous minimally invasive treatment of upper tract TCC). All patients were scanned after i.v. administration of frusemide and contrast material and the workstation displayed (via appropriate software) the processed fly-through as volume rendered images which were compared with the endoscopic (rigid – flexible ureteropyeloscopy) and pathological findings (both served as the gold standard).

RESULTS

Endoscopic and pathological findings revealed 3 cases of TCC, 1 case of distal ureteric stricture, 1 case of pyelitis cysrica and 6 cases without abnormalities (including the cases of follow up). CTVU correctly detected the lesions or excluded pathology in other patients, except one case in which the mucosal thickening that was detected on CTVU wasn't endoscopicaly confirmed.

CONCLUSION

CTVU is useful for visualising the upper urinary tract TCC, for distinguishing tumors from ureteric strictures and for the follow up subsequent to previous minimally invasive treatment of upper tract TCC.

16

Training urologists to do ultrasound. What do the radiologists think?

B.W. ELLIS, L. TURNER and S. JOHNSTON
Ashford & St Peter's Hospitals NHS Trust, Ashford & St Peter's Hospital, Ashford, UK

INTRODUCTION

With pressure on cancer targets many urologists are doing their own ultrasound examinations. A recent survey revealed that 38% of urologists were doing so. BAUS has agreed that future urologists should be trained in ultrasound skills. The Royal College of Radiologists (RCR) and BAUS have worked together to produce an agreed syllabus.

METHOD

To determine attitudes within radiology and assess the logistics of training, a survey was undertaken of consultants and SpRs in radiology. The forms were sent out by the RCR to every radiologist in the country.

RESULTS

Replies were received from 540 consultants and 57 SpRs. 314 (55%) agreed that it was a good idea for urologists to be trained to do diagnostic ultrasound. 239 (40%) of radiologists would train urology SpRs. They would devote 1.8 hours per week for the extra training and believed that a urology SpR would need 3 hours per week for 9 months to train to level 1 practice. 171 (44%) were concerned at the loss of a core service and 70 (19%) accepted concern about loosing private practice.

CONCLUSION

Together with their sonographers we believe that there are adequate numbers of radiologists, to train the SpRs of the future.

FUNDING

Modernisation Agency

17

Training urologists to do ultrasound. Is it worthwhile? A cost benefit analysis

B.W. ELLIS, I. WALLACE and S. JOHNSTON
Ashford & St Peter's Hospitals NHS Trust, Ashford & St Peter's Hospital, Ashford, UK

INTRODUCTION

BAUS has agreed that the future urologist should be trained in basic ultrasound skills. It has been argued that such an approach saves resources. The study was designed to investigate whether savings would be realised and when break-even might occur.

METHOD

Case notes were examined to evaluate patient journeys through the system. Throughput figures of patients in urology clinics and numbers referred to radiology for scanning were used with local reference costs to model potential resource savings.

RESULTS

Implementing ultrasound scanning by urologists is cost neutral after two years. In subsequent years for a cost of £3612, savings of £21 427 can be realised.

CONCLUSION

Initial consultations would inevitably be longer but in many cases a further appointment would be unnecessary. The extra time to scan compares favourably with the time taken to write a radiology request form and, at a later date, for a clinician to acquaint themselves with the clinical detail and advise the patient. Short term investment will lead to significant cost and capacity saving in urology and radiology. However, those savings will only be realised after several years of investment.

FUNDING

Modernisation Agency

18

Acute segmental infarction of testis? A differential diagnosis for acute scrotum

S. SRIPRASAD, P. BILAGI, G.H. MUIR and P.S. SIDHU
King's College Hospital, Denmark Hill, London, UK

INTRODUCTION AND OBJECTIVE

Acute segmental testicular infarction (ASTI) is an uncommon testicular condition caused by varied conditions. The objective of this study was to analyse the clinical features and to establish the salient ultrasound appearances of ASTI.

METHODS

Sixteen patients were diagnosed with ASTI; [mean age 44.9 years (range 17–50)]. All patients presented with sudden onset of acute testicular pain, scrotal swelling with mobile testis. All patients underwent high frequency colour Doppler ultrasound (CDUS); using the Siemens, Acuson Sequoia, 15 MHz multi frequency linear probe.

RESULTS

A focal area of altered reflectivity, with diminished colour Doppler flow and no acoustic enhancement was attributed to ASTI. All the 16 patients demonstrated this ultrasound appearance. Five patients had exploration of testis and excised tissue from suspicious areas demonstrated focal necrosis and atrophy without evidence of malignancy. The other 11 patients had follow up examinations at 3 and 6 months intervals and this revealed resolution of these focal abnormalities. Symptoms were self limiting.

CONCLUSION

ASTI has only recently been recognised due to improvements in ultrasound probe technology. Awareness of the condition and diagnosis based on specific CDUS features make relatively confident diagnosis of this condition. This will enable conservative management in appropriate patients.

19

A randomised controlled trial of topical glyceryl trinitrate pre transrectal ultrasound guided biopsy of the prostate

J.E. McCABE, J. PHILIP and P.M. JAVLE
Michael Heal Department of Urology, Leighton Hospital, Crewe, UK

INTRODUCTION

Peri-prostatic local anaesthesia (LA) for TRUS guided prostate biopsy has increasingly become common practice. However, many patients find the introduction of the TRUS probe more painful than the biopsy itself. Topical glyceryl trinitrate (GTN) is utilised in the treatment of painful anal fissure, reducing smooth muscle sphincter tone. We tested its use as an adjunct to LA in TRUS biopsy.

METHODS

148 consecutive patients undergoing first TRUS biopsy were randomised to either receive topical 0.4% GTN paste or placebo 10 minutes prior to biopsy. All patients underwent TRUS biopsy preceded by injection of 10 ml peri-prostatic 1% lidocaine LA. A 10 point visual analogue score was used to record pain experienced due to the probe insertion, the biopsy and pain prior to leaving the department.

RESULTS

Mean age of the patients was 67.0. There was no significant difference in age, PSA and prostate volume between the groups. There was a significant decrease in mean pain score due to probe insertion in the GTN group, compared to placebo (1.8 versus 3.2, $P < 0.05$). There was no significant difference in the other pain scores.

CONCLUSION

Peri-anal GTN is an effective and well tolerated adjunct in relieving pain associated with TRUS guided prostate biopsy.

20

A prospective, randomised, double-blind, placebo-controlled trial of the effects of glyceryl trinitrate ointment on the pain experienced during TRUS-guided biopsy of the prostate

R.C. CALVERT, S. TANEJA, N. SMITH, N.B. WATERFALL and I. HUSAIN
Bedford Hospital NHS Trust, Bedford, UK

INTRODUCTION

Topical glyceryl trinitrate (GTN) causes a rapid relaxation of anal sphincteric tone and is used in the treatment of chronic anal fissures. A proportion of patients undergoing TRUS-guided biopsy of the prostate experience severe pain on probe insertion. This study tests the hypothesis that GTN ointment reduces the pain experienced during probe insertion.

METHODS

100 patients were to be randomised in a double-blind fashion to GTN or placebo ointment before prostate biopsy. Primary outcome was assessed using *t*-tests of the mean visual analogue pain scores for probe insertion and pain experience during biopsy. Blood pressure and side effects were monitored during, immediately after and at clinic follow-up.

RESULTS

The trial was stopped after an interim analysis of 50 patients because there was a trend to higher pain score in the GTN group during biopsy (5.1 cf. 4.1 out of 10, $P = 0.14$). The mean pain scores on probe insertion were no different, although fewer patients had pain scores above 3 for probe insertion in the GTN group (14% cf. 24%). There was no significant difference in side effects.

CONCLUSION

GTN ointment does not reduce the overall pain experience during TRUS-guided biopsy of the prostate.

21

How effective is magnetic resonance imaging (MRI) in determining organ confined prostate cancer prior to radical prostatectomy

A. HAWIZY, P. O'MALLEY, R.A. HURLE, J. REES, O. HUGHES and H. KYNASTON
Urology and Radiology Department, University Hospital of Wales, Cardiff, UK

INTRODUCTION

MRI is routine part of prostate cancer staging in determining whether patients should be offered radical prostatectomy (RP). The aim of this study was to compare the MRI staging in T1c and T2 tumours to final histopathology staging.

METHODS

245 patients underwent RP in the University Hospital of Wales (Feb 1997–Jan 2005). 219 patients were identified for this study. The MRI were reported by one consultant radiologist (T1c = 83 and T2 = 136), while the histology was examined by one of two consultant uropathologists.

RESULTS

When MRI demonstrated T1c disease, 18% (15/83) were upstaged to T3 disease. 19 specimens had positive margins (10/19 had apical margins only), and 9 had significant non-apical positive margins. Of patients with stage T2 on MRI, 30% (41/136) had T3 disease. 36/136 patients had positive margins (22/36 had apical margins only and 16 had significant non-apical positive margins).

CONCLUSION

Higher stage tumours on MRI have an increased risk of extra capsular extension on pathology after RP. However, localised prostate cancer on MRI proved to be localised on histology examination in 70–80% of cases. We believe that MRI plays a useful role in identifying men suitable for RP.

Tuesday 28 June 14.00–15.00
Testis Cancer – The Last Bastion for Major Surgery
Chairmen: N. Clarke and D. Kirk

33

An audit of the frequency of frozen section in the management of intrascrotal mass lesions

P. KUMAR, A. FREEMAN, P.J.R. SHAH, P. CUCKOW, D.J. RALPH and S. MINHAS
The Institute of Urology and University College Hospital, London, UK

INTRODUCTION

The number of frozen sections (FS) requested to elucidate the morphology of intrascrotal space-occupying lesions appears to have increased, prompting audit.

METHOD

The total number of intra-operative FS requested was compared over two three-year periods from 1991–4 and 2001–4. Clinical presentation; reason for FS request; FS and paraffin diagnoses; and subsequent operative management were noted. The number of radical orchidectomies for tumour carried out in the same periods was also recorded.

RESULTS

Between 1991–4, only two FS were requested, whilst 42 orchidectomies were performed for tumour. In contrast, in the period 2001–4, eleven FS were requested on the basis of either solitary testis, clinical uncertainty with respect to site or small size of lesion (Table 1), whilst a total of 53 orchidectomies for tumour were undertaken.

Case	Age	Presentation	Size	FS diagnosis	Management
1	29	Palpable mass in solitary testis	0.5 cm	Leydig nodule	Local excision
2	37	Palpable mass	1.5 cm	Benign cyst	Local excision
3	37	Palpable mass	0.5 cm	Leydig nodule	Local excision*
4	42	Palpable mass	1.5 cm	Tunical scar	Local excision
5	22	Palpable mass in solitary testis. Known lymphoma	4.0 cm	Lymphoma	Orchidectomy, chemotherapy
6	32	Incidental finding	0.3 cm	Leydig nodule	Local excision
7	39	Palpable mass, recent trauma	1.5 cm	Scar	Local excision
8	62	Palpable mass	0.8 cm	Adenomatoid	Local excision
9	43	Palpable mass	N/A	Tunical cyst	Local excision
10	38	Palpable mass, previous orchidopexy,	4.0 cm	Seminoma	Orchidectomy
11	30	Palpable mass, previous orchidopexy,	1.0 cm	Leydig nodule	Local excision

**Postoperative complication resulted in orchidectomy.*
N/A = not available.

CONCLUSION

The frequency of intra-operative FS during testicular exploration has increased over the past ten years. In 9 of 11 cases, the FS diagnosis was not that of germ cell tumour or lymphoma, resulting in testis-sparing surgery. A comparison of FS and paraffin section diagnoses upheld the accuracy of this technique.

34

Sex-cord stromal testicular tumours – has the case for retroperitoneal lymph node dissection in stage I disease been sexed up?

J.M. FEATHERSTONE, J.M. THEAKER, P.D. SIMMONDS, G.M. MEAD and M.C. HAYES
Southampton University Hospitals NHS Trust, Southampton, UK

INTRODUCTION

Sex-cord stromal (SCS) tumours represent 3–5% of all testicular tumours. 10% are reportedly malignant but no accurate predictors of malignancy are known. Some centres advocate prophylactic retroperitoneal lymph node dissection (RPLND) for stage I disease. We report the Wessex experience of these tumours to determine whether this policy is justified.

PATIENTS AND METHODS

A retrospective proforma-based study of all SCS testicular tumours treated in Wessex (1982 to 2004) was performed ($n = 33$), and compared with malignant SCS tumours from the literature.

RESULTS

All patients were treated by excision of the primary alone. None of the tumours behaved in a malignant fashion. Features that favoured malignant behaviour included larger tumours (Mean size 6.19 vs 1.42 cm), tumour necrosis, angiolymphatic invasion, infiltrative margin and tumour extension outside the testicle (all $P < 0.001$). The Wessex group were all alive (disease free) with a median survival of 4.9 years (range 0.11–22.6 years). The malignant group had a median disease specific survival of 2 years.

CONCLUSIONS

No malignant cases were encountered in this, the largest reported UK series of SCS testicular tumours, suggesting that current malignancy rates may be less than 10 per cent. Prophylactic RPLND is probably unnecessary in stage I tumours.

35

Redo-retroperitoneal lymph node dissection after chemotherapy for metastatic testicular malignancy

S.F. WILLIS, M.A. KHAN and T.J. CHRISTMAS
Royal Marsden Hospital, Fulham Road, London, UK

INTRODUCTION

Post-chemotherapy retroperitoneal lymph node dissection (RPLND) is well established as a definitive management of residual disease in non-seminomatous germ cell tumours (NSGCT). However, on follow-up recurrent disease may be detected requiring redo-RPLND. We determined whether this is associated with a worse prognosis.

PATIENTS AND METHODS

In a series of 309 consecutive RPLNDs, 50 men had previously undergone RPLND at other hospitals. We compared the long term outcome of those having primary RPLND at our institution with those having redo-RPLND. Univariate logistic regression and Kaplan-Meier analysis was utilised.

RESULTS

The mean time from original to re-do surgery was 68 months (range: 3–227 months). The presence of malignant teratoma undifferentiated/ intermediate (MTU/I) in the original RPLND was a negative prognostic factor for disease recurrence ($P < 0.01$). Furthermore, redo-RPLND was associated with worse long-term survival irrespective of the underlying pathology ($P < 0.05$). The 5, 10 and 15-year likelihood of survival for those with primary RPLND versus those with re-do RPLND is 95%, 94%, 89% versus 94%, 88%, 65%, respectively.

CONCLUSIONS

MTU/I impacts negatively on disease-free survival after RPLND. Redo-RPLND is associated with worse long-term outcome. Therefore, it is vital to achieve complete clearance of retroperitoneal disease at the time of primary RPLND.

36

Bone metastases from testicular tumours: management and outcomes

M.A. KHAN, A. NORMAN, R. HUDDART, A. HORWICH and T.J. CHRISTMAS
The Royal Marsden Hospital, Fulham Road, London, UK

INTRODUCTION

Bone is an uncommon site for testis cancer metastasis. We investigated the prevalent site of such metastases and also determined survival rates associated with bone metastasis.

PATIENTS AND METHODS

From our database of testis cancer accumulated from 1978–2003 we identified 87 men who developed bone metastases. The vertebral column was the most common site (66%). Less common sites included the pelvis, skull, humerus, femur and sphenoid. The histology of the primary tumour was predominantly teratoma (68%). The remainder consisted mostly of pure seminoma (24%). The primary treatment for these patients was platinum-based chemotherapy. Since 1993, surgery was

performed for post-chemotherapy residual spinal teratoma masses, with bone graft reconstruction. Radiotherapy was utilised for men with bone metastases secondary to pure seminoma.

RESULTS

Overall survival in our series was disappointing with teratoma trending towards a worse prognosis with 1, 6, 9, 18 and 24-month survival rates of 83%, 34%, 26%, 18%, 6% vs 78%, 56%, 44%, 33%, 15% ($P < 0.1$). In addition, surgical excision of residual teratoma masses did not provide any survival benefit.

CONCLUSIONS

The presence of testis cancer within bone is associated with a poor prognosis. This might be related to poor penetration of chemotherapy agents into bone.

37

Pulmonary metastatectomy for urological cancer

B.J.R. BARRASS, R. JONES, R. PERSAD and C. FORRESTER-WOOD
Bristol Royal Infirmary, Bristol, UK

INTRODUCTION

Pulmonary metastatectomy is an accepted treatment for patients with lung metastases. We sought to establish if pulmonary metastatectomy is an effective treatment for patients for patients with urological cancer.

METHODS

Notes were reviewed for all patients who underwent pulmonary metastatectomy for urological cancer between 1983 and 2000 in a single cardio-thoracic unit. Information regarding treatment, disease free interval (DFI) and outcome was recorded.

RESULTS

For germ cell tumours surgery was only considered after chemotherapy. No lesions contained viable cancer and the mean 5 year survival was 85.7%. For renal cancer and the mean five year survival was 67%, including 3 who survived over 15 years. 66.7% of patients with bladder cancer survived over 4 years. One patient underwent lobectomy for prostate cancer and, after starting anti-androgens, survived for over 6 years. The mortality was 3.7%.

DISCUSSION

Pulmonary metatstatectomy is safe and is associated with prolonged survival for patients with pulmonary metastases from urological cancers. Adjuvant therapy was not used for renal or bladder cancer so the prolonged survival may have been a direct consequence of metatastectomy. For prostate and testicular cancer, adjuvant therapy means the survival benefit from surgery is less clear.

38

Anatomical anomalies in 278 consecutive retroperitoneal node dissections for testicular cancer

J.M. ADSHEAD, J. FILIADIS and T.J. CHRISTMAS
Charing Cross Hospital, London, UK

OBJECTIVE

Certain congenital abnormalities of retroperitoneum such as cryptorchidism and inguinal hernias are considered established associations with testicular cancer. It has been proposed that the abnormalities in retroperitoneal development may contribute to the increased of testicular cancer. We hypothesise that there is an increased frequency of other developmental abnormalities in the retroperitoneum in patients who develop testicular cancer. In this study we review the anatomical findings of a large series of patients with testicular cancer who underwent retroperitoneal lymph node dissection for removal of masses resistant to primary chemotherapy.

MATERIALS AND METHODS

Our findings were obtained from history, preoperative CT scan and retroperitoneal lymph node dissections. Previously corrected or persistent cryptorchidism and inguinal herniae in childhood were included as congenital retroperitoneal anomalies in our study. A total of 278 patients were included all of whom underwent RPLND for post chemotherapy residual masses. The incidence of retroperitoneal abnormalities was compared to the available figures of these abnormalities from radiological and post mortem studies of the general population.

RESULTS

46 of our 278 had a total of 51 ipsilateral retroperitoneal anatomical anomalies. The results are tabulated below including the incidence within the general population.

Anomaly ipsilateral to side of original tumour	Left	Right	Grand Total	Actual numbers	Grand Total %	Gen Pop^{n} %
Cryptorchid history	12	9	21	21/278	7.6	0.8
Ipsilateral complete duplex ureter	2	0	2	2/278	0.72	0.68
Right gonadal draining into right renal vein	N/A	1	1	1/130	0.77	1.33
Horseshoe kidney	N/A	N/A	1	1/278	0.36	0.39
Hypospadias	N/A	N/A	1	1/278	0.36	0.40
Ipsilateral Inguinal hernia	3	2	5	5/278	1.80	1.0
L gonadal draining into IVC	1	N/A	1	1/148	0.68	0.66
Left sided IVC	8	N/A	8	8/148	5.4	0.17
Ipsilateral absence of kidney	1	2	3	3/278	1	0.09
Precaval right renal artery	N/A	2	2	2/130	1.53	0.8
Retro-aortic left renal vein	5	N/A	5	5/148	3.38	0.75
History of torsion	1	0	1	1/278	0.36	0.62
Grand Total of anomalies	34	17	51			
Grand total with no amomaly	114	113	127			
Total number of RPLNDs	148	130	278			

CONCLUSIONS

In our study the incidence of cryptorchidism and inguinal hernia was increased compared to the general population as has been previously reported. Of interest and a new finding is that there is an increased incidence of left sided IVC, retroaortic left renal vein, as well as other anomalies giving support to the hypothesis that retroperitoneal maldevelopment may play a role in the risk of developing testicular cancer.

Tuesday 28 June 15.00–16.00
Renal Transplantation
Chairmen: M. Bishop and P. Friend

48

Laparoscopic live donor nephrectomy in the over 60s

C.H. WILSON, K. RUSSELL, V. ANAND, A.A. BHATTI, D.A. RIX and N.A. SOOMRO
The Freeman Hospital, Newcastle upon Tyne, UK

INTRODUCTION AND METHODS

There is evidence that donors over the age of 60 may be more at risk from cardiac and pulmonary complications during conventional open donor nephrectomy. When questioned in 1999, 18 of 29 UK centres performing live donor renal transplantation set an upper age limit on kidney donation (Lumsdaine *et al.* BJS. 1999; 7: 877–81). We reviewed our centre's experience of laparoscopic live donor nephrectomy with respect to donor age.

RESULTS

31 laparoscopic donation procedures were performed between April 2002 and December 2004. Seven (23%) of the potential donors were over 60 at the time of referral (range: 63–81 years). The older donors had a lower GFR (mean 88 vs. 102 ml/min, $P = 0.05$, *t*-test) and gave to older recipients (52 vs. 37 years, $P = 0.03$). There were no significant peri-operative complications in the over 60s and the mean hospital stay was 4 days (under 60: 3 days, $P = 0.13$). All the grafts derived from elderly donors functioned immediately, however the calculated GFR at discharge was lower (mean 42 vs. 68 ml/min, $P < 0.001$) in keeping with the recipient's being older.

CONCLUSIONS

With the advent of minimal access surgery empirical age limits for kidney donation are unjustified.

49

A randomised trial of open versus laparoscopic live donor nephrectomy

N.R. BROOK, G.R.R. LEWIS, R. ELWELL and M.L. NICHOLSON
University of Leicester Division of Transplant Surgery, Leicester General Hospital, Leicester, UK

AIMS

Laparoscopic donor nephrectomy offers advantages for the donor compared to the open procedure, but it is unclear whether these benefits are conferred without compromise to the allografted kidney. This study presents a prospective randomised trial designed to address this question.

METHODS

Seventy-eight live kidney donors were randomised to laparoscopic (LDN $n = 52$) or open donor nephrectomy (ODN $n = 26$). Operative and recovery parameters were recorded and recipient outcome and allograft function were compared.

RESULTS

There was no mortality, allograft thrombosis or delayed graft function in either group. First warm ischaemic time was longer for LDN (3.6 vs 2 minutes; $P < 0.001$) and LDN operation time was longer (185 ± 40 vs 135 ± 25 min; $P < 0.05$). LDN led to reductions in length of stay (4 vs 5.5 days; $P < 0.01$), and return to normal activities including employment (6 ± 3 vs 11 ± 6 weeks; $P < 0.02$). There were no differences in donor complication rates. Serum creatinine at 6 months was 124 ± 28 vs 138 ± 42 μmol/l for LDN vs ODN transplants (NS).

CONCLUSIONS

This high level evidence suggests that laparoscopic live donor nephrectomy can remove some of the disincentives to live kidney donation without compromising the allografted kidney.

50

Multi-slice spiral CT and magnetic resonance imaging in assessment of renal vascular anatomy for live kidney donors

A.A. BHATTI, A. CHUGTAI, D. TALBOT, D.A. RIX, P. HASLAM and N.A. SOOMRO
The Freeman Hospital, Newcastle upon Tyne, UK

AIM

This study was designed to assess the role of multislice CT angiography and magnetic resonance angoigraphy (MRA) in evaluation of renal vascular anatomy for open and laparoscopic live donor nephrectomy.

MATERIAL AND METHODS

31 prospective donors underwent CT, gandolinium enhanced MR angiography and surgery. In addition to axial images, Multiplanar reconstruction and Maximum intensity projections were used to display renal vascular anatomy. A total of 31 patients have undergone surgery including 24 left laparoscopic procedures whereas 7 donors had RT-open nephrectomy. CT and MRI images were analysed by two radiologists independently. Radiological and surgical correlation was made after donor surgery.

RESULTS

	Surgery	CT	Sensitivity	MR	Sensitivity
Main renal Art.	33	33	100%	32	97%
Main renal Veins	32	32	100%	31	97%
Accessory Art.	05	05	100%	01	20%*
Accessory Veins	03	03	100%	02	67%*
Lt. Lumbar Veins	19	18	95%	09	47%*
Lt. Gonadal Veins	24	17	74%	11	46%*

**P-value – significant < 0.05, Fisher's exact test.*

CONCLUSION

CT and MR angiogram were comparable for main renal artery and vein, whereas CT was found to be superior in detecting lumbar, gonadal veins and accessory vessels.

51

Magnetic resonance imaging of living related kidney donor – an analysis of 111 consecutive cases

D. HODGSON, S. AHMED, S. RANKIN, W. JAN, G. KOFFMAN and S. KHAN
Guy's Hospital, London, UK

INTRODUCTION

We have previously reported on CT and MR Angiography prior to donor nephrectomy, the latter becoming our investigation of choice. We have now reviewed the information gained from 111 consecutive scans.

METHODS

A retrospective case note study was performed on all patients undergoing MRI angiography over the last four years. The MRI findings were compared with the anatomy seen at nephrectomy, and the complexity of surgery at transplantation.

RESULTS

111 donors were scanned (50 males, age range of 23–74). Arteries: 93 kidneys (83.8%) had one artery. 18 kidneys (16.2%) had a single accessory artery, ten of which were considered of sufficient size to anastomose. Of the total of 129 arteries MRI visualised 120 (93.1%). Of the 9 not identified preoperatively, four were sacrificed, four were anastomosed, and one was inadvertently damaged. Veins: 98 (88.2%) patients had one renal vein. Of the 13 extra renal veins, three were identified pre-operatively, but only 1 was anastomosed (not seen).

CONCLUSION

MR angiography has the advantage over CT of virtually no side effects. However, in light of the failure to visualise all arteries transplanted, we have started to use multi-slice (16 channel) CT to see if its improved spatial resolution alters our results.

52

A meta-analysis of the prophylactic use of ureteric stents in renal transplantation

C.H. WILSON, A.A. BHATTI, D.A. RIX and D.M. MANAS
The Freeman Hospital, Newcastle upon Tyne, UK

INTRODUCTION

Urine leak and ureteric stenosis remain relatively common complications following renal transplantation, with a reported incidence ranging between 0.5 and 20%. Some centres advocate routine insertion of ureteric stents, in all renal transplant recipients, to reduce the incidence of these major urological complications.

PATIENTS AND METHODS

All randomised controlled trials examining the use of double J stents to prevent urological complications in renal transplant recipients were identified by a combination of computer literature searches, handsearching and personal communication.

RESULTS

Seven studies randomised a total of 1154 patients. The overall major urological complication (leak and/or stenosis) rate was 5.3%. Within the universal prophylactic stenting group the complication rate was 1.3%, while within the unstented group it was 9.3% (Relative risk 0.25; 95% confidence intervals 0.08–0.80, $P < 0.02$). Stents were associated with an excess risk of urinary tract infection (RR 1.49; 1.04–2.15, $P = 0.03$). Subgroup analysis suggested that this risk was eliminated when recipients were administered the equivalent of co-trimoxazole 480 mg od.

CONCLUSIONS

Routine placement of ureteric stents in recipients of renal transplants reduces the incidence of major urological complications. Stents are associated with an increased risk of urinary tract infection but concurrent administration of antibiotics significantly reduces this risk.

53

Ureterocystoplasty (UC): an excellent alternative in patients suitable for renal transplantation

R. MAHDAVI, S. MIRSADRAEE, H. GHORBANI and H.R.H. PATEL
Imam Reza University Hospital, Mashad, Iran, and Institute of Urology and Nephrology, UCL, London, UK

INTRODUCTION

It has been shown that the dilated ureter in a non-functioning kidney can be used for ureterocystoplasty (UC) to increase the bladder capacity in patients with poorly compliant, high pressure bladders. The aim of this study was to assess the outcome of this technique in a group of patients with renal failure.

PATIENTS

Eleven patients were identified between 1997 and 2002 (2 females and 9 males) who had undergone UC with a mean age of 15.6 years. Eight had neurogenic bladders and 3 had posterior urethral valves.

RESULTS

The hospital stay was 3–7 days. The bladder volume improved from a mean of 124 ml before the operation to a mean volume of 317 ml after the operation ($P < 0.01$). All patients were dry post-operatively and only 3 required clean intermittent catheterisation. Five of the 6 patients with renal failure underwent renal transplant post UC.

CONCLUSION

Ureterocystoplasty is a useful bladder augmentation technique in patients with a non-functioning kidneys and dilated ureters. In patients with chronic renal failure it should not be forgotten as an augmentation medium.

Tuesday 28 June 16.00–17.00
Botox for the Bladder: Efficacy and Outcome
Chairmen: S. Harrison and J. Shah

58

Effects of botulinum toxin B on refractory detrusor overactivity: a randomised, double-blind, placebo controlled, cross over trial

M. GHEI, B.H. MARAJ, S. NATHAN, R. MILLER and J. MALONE-LEE
Whittington Hospital, London, UK

INTRODUCTION

Intravesical injections of botulinum toxin have shown beneficial therapeutic effects in cases of detrusor overactivity. Since findings of open pilot studies seemed to have clinical benefit, we undertook a formal trial.

PATIENTS AND METHODS

20 patients, aged 18–80 years, with refractory detrusor overactivity, participated in a randomised, double-blind, placebo controlled cross-over trial. They were injected with either placebo (20 ml Normal Saline) or botulinum toxin B (5000 IU diluted up to 20 ml) intravesically in a day case setting. After six weeks of washout, the treatments were crossed over.

RESULTS

The Willcoxon Signed Ranks Test was used to test the difference in change between variables. No carry-over was noted in the second arm placebo and these data were pooled. There were clinically significant differences in the change in average voided volume (95% CI diff 16, 122; $z = -2.5$; $P = 0.012$), urinary frequency and episodes of incontinence along with Quality of Life between active treatment and placebo.

CONCLUSION

This study provides evidence of efficacy of botulinum toxin B in the treatment of overactive bladder. This formulation and dose has a rapid onset of action (24 to 48 hours) but short duration, about six weeks.

59

A quantitative assessment of the effect of botulinum toxin type A on voiding detrusor contractility

A.W. MUSTAFA, D.R. SMALL, G.N. RAJKUMAR and I.G. CONN
Southern General Hospital, Glasgow, UK

INTRODUCTION

Botulinum Toxin Type A (BTXA) is becoming a standard treatment for neurogenic and idiopathic detrusor overactivity (DO). BTXA, by its mode of action, might be expected to decrease the detrusor voiding contraction power. This is the first published quantitative assessment of voiding contractility post BTXA.

PATIENTS AND METHODS

15 female patients with idiopathic DO were injected with BTXA. Filling and voiding urodynamics were performed before and 6 weeks after BTXA. Projected isovolumetric pressure (PIP_1) [Griffiths D. Detrusor contractility. Scandinavian Journal of Urology and Nephrology. 2004; 38 (Supplement 215): 93–100] was used to assess voiding contractility. 15 further patients with interstitial cystitis will be recruited.

RESULTS

Of fifteen patients with DO, 11 had complete voiding data. The contractility factor PIP_1 decreased significantly post BTXA ($P = 0.01$) with the median value falling from 69 to 45. Variance was represented by upper and lower quartiles (pre-BTXA 58 & 75) (post-BTXA 42 & 57).

CONCLUSION

PIP_1 decreased significantly post BTXA. Although contractility has been reduced by BTXA, the median value is comparable with that of Griffiths [Griffiths D. Detrusor contractility. Scandinavian Journal of Urology and Nephrology. 2004; 38 (Supplement 215): 93–100] who measures 49 as the mean PIP_1 in 100 elderly women. These had urge incontinence but not necessarily a voiding disorder. Effects were found to last between 20–24 weeks.

60

Intradetrusor injection of botulinum neurotoxin type A (BoNT/A) in the treatment of detrusor overactivity

V. KALSI, A. APOSTOLIDIS, R. POPAT, S. EL-NEIL, C.J. FOWLER and P. DASGUPTA
National Hospital for Neurology and Neurosurgery, Queen Square, London, UK

INTRODUCTION

BoNT/A has been shown to be an effective second line treatment of neurogenic (NDO) and idiopathic (IDO) detrusor overactivity. We aim to present our short-term results of patients treated.

METHOD

Patients with urodynamically proven spinal NDO/IDO refractory to oral anticholinergics were injected. Following antibiotic prophylaxis 200 u (IDO) or 300 u (NDO) of Botox® was injected using a trigone sparing, minimally invasive outpatient technique. Baseline and follow-up assessment at 4 and 16 weeks post-treatment included standard cystometry, a 4-day bladder diary and quality of life questionnaire.

RESULTS

Forty seven patients with NDO (9 male, 38 female) – mean age 47.06 ± 1.47 years (range 21–67) and thirty one with IDO (13 male, 18 female) – mean age 49.10 ± 2.83 years (18–80) were treated. There is significant and sustained improvement in LUTS post treatment.

	Pre	4/52	16/52
MCC	216.0 ± 17.97	475.9 ± 26.71	390.1 ± 23.83
MAX PDET	61.24 ± 5.81	27.98 ± 3.39	33.65 ± 3.66
F	12.76 ± 0.62	6.73 ± 0.52	7.16 ± 0.48
L	3.67 ± 0.49	0.33 ± 0.09	0.69 ± 0.15
U	8.58 ± 0.72	2.64 ± 0.62	2.57 ± 0.49
QOL ICS 'BPH'	124.2 ± 5.98	84.47 ± 6.41	88.65 ± 5.25
QOL UDI6/IIQ7	23.77 ± 1.96	7.58 ± 1.99	7.54 ± 2.24

MCC, Maximum cystometric capacity (ml); Max pDet, Maximum detrusor pressure during filling (cm H_2O); F, Frequency of voids in 24 h; L, Leak episodes in 24 h; U, Voids with urgency in 24 h; QoL, Quality of life score.

CONCLUSIONS

Patients with intractable DO in spite of aetiology tolerate and respond well to intradetrusor BoNT/A with significant improvements in urodynamic, clinical and quality of life parameters.

61

A cost effectiveness model for botulinum neurotoxin type A (BoNT/A) in the treatment of patients with detrusor overactivity: preliminary results

V. KALSI, R. POPAT, I. ODYEMI, J. BORRILL, C.J. FOWLER and P. DASGUPTA
National Hospital for Neurology and Neurosurgery, Queen Square, London, UK

INTRODUCTION

Intradetrusor BoNT/A injections provide an effective and sustained treatment for symptoms of detrusor overactivity (DO) refractory to anticholinergic therapy. The aim of this study was to model the resource utilisation, costs and health outcomes associated with minimally invasive outpatient injections.

METHODS

Data were collected for 89 adults with urodynamically-proven DO at weeks 4 and 16 post injection. Resource utilisation and unit costs determined for BoNT/A therapy included consultations, patient monitoring and management. Symptomatic improvement in frequency, urgency and incontinence was determined using voiding diaries. Clinical improvement was defined as >50% improvement in ≥1 of these symptoms. Model outputs included the average cost per patient per injection (based on pre/post treatment assessment, cost of BoNT/A and injection), mean resource utilisation and the average cost per improved-patient month. Sub-analysis compared patients with refractory idiopathic DO and neurogenic DO.

RESULTS

Significant improvement was observed in all symptoms at weeks 4 and 16 in all patient groups ($P < 0.05$ – Wilcoxon signed rank test). Clinical improvement was seen in 78% of patients at 4 and 54% of patients at 16 weeks No significant difference in clinical outcome between patient subgroups (Mann–Whitney test) was demonstrated. Average cost per patient per injection was £826 (IDO 200 u BoNT/A and NDO 300 u). Based on a median time between injections of 13 months (range 7–26) this approximates to £65/month or mean cost per improved-patient month of £84 at 4 and £120 at 16 weeks.

CONCLUSIONS

This study has quantified the costs and benefits of this therapy. Further work is required to establish the duration of clinical effect and the impact of this treatment on quality of life before its true cost effectiveness can be evaluated.

62

Day case treatment of resistant neurogenic detrusor overactivity, following traumatic spinal cord injury

P. PATKI, K. ARUMUGAM, R. HAMID, P.J.R. SHAH and M. CRAGGS
Spinal Injuries Unit RNOHT Stanmore and Institute of Urology and Nephrology, London, UK

INTRODUCTION

Minimally invasive options are limited to treat drug resistant neurogenic detrusor overactivity (NDO) in spinal cord injury (SCI) patients. We report a day case treatment with Intra-detrusor (ID) injections of English Botulinum Toxin A (Dysportâ).

PATIENTS AND METHODS

One thousand units of Dysportâ were cystoscopically injected ID at 30 sites, in 24 patients with refractory NDO. Mean age was 39.2 years. Eleven patients were taking Oxybutynin or Tolterodine, and further 8 used combination of Oxybutynin and Tolterodine. Fourteen patients were incontinent on preoperative videocystometrogram (VCMG). VCMG was repeated three months post treatment.

RESULTS

Mean follow-up was 10 months (range 3–21). Maximum cystometric capacity increased from a mean 260.5 ml (range 50–600) to 518.9 ml (range 40–1000, $P < 0.0001$). Maximum detrusor pressure decreased from a mean 52.5 cm H_2O (range 17–148) to 25.2 cm H_2O (range 3–70, $P < 0.0001$). Fifteen patients had no unstable contractions in postoperative VCMG; they persisted in 7. Incontinence ceased in 11/14 patients. Eight patients stopped, 7 reduced and 4 remain on same dosage of anticholinergics. Eight patients required re-injections at an average of 9.3 months.

CONCLUSIONS

In short term, ID Dysportâ injections is an effective day case treatment of refractory NDO in SCI patients.

63

Intravesical resiniferatoxin (RTX) improves quality of life (QOL) in patients with urgency and frequency due to increased bladder sensation

A. APOSTOLIDIS, G. GONZALES and C.J. FOWLER
The National Hospital for Neurology and Neurosurgery, UCLH, London, UK

INTRODUCTION

Little has been published about the effect of intravesical RTX on the QOL of patients with LUT dysfunction. We examined the effect of RTX on the QOL of patients with urgency and frequency due to increased bladder sensation (previously 'sensory urgency') using the King's Health Questionnaire (KHQ).

PATIENTS AND METHODS

Thirteen patients with intractable urgency/frequency and with no evidence of DO during standard voiding cystometry who had responded clinically to a single, intravesical instillation of 100 ml 50 nM RTX (ICOS Corporation, USA) were assessed at 1, 3 and 6 months post treatment for changes in total KHQ and individual QOL domain scores.

RESULTS

Significant improvements (paired *t*-test, $P < 0.05$) were noted at 1/12 and 3/12 post RTX in total KHQ score (576.7 ± 38.3 v 424.9 ± 55.4 v 483.4 ± 60.0). A marked decrease ($P = 0.05$) was also found 6/12 post RTX (562.8 ± 38.8 v 466.2 ± 54.1, $n = 12$). The following individual domains improved at 1/12: General Health Perception, Role Limitations, Physical Limitations, Sleep/Energy, Incontinence Impact, and Personal Relationships. The latter 2 showed sustained improvement at 6/12 post RTX.

CONCLUSIONS

Intravesical RTX improves select QOL parameters in patients with frequency and urgency due to increased bladder sensation.

FUNDING

St. Peter's Trust Grant (A. Apostolidis)

Wednesday 29 June 09.30–10.45
BPH – New Treatments and Old
Chairmen: P. Gilling and J. Nordling

69

A comparison between 1.5% glycine and 5% glucose irrigants' effect on patient's myocardium and surgeons technique during transurethral resection of the prostate (TURP)

J.W. COLLINS, S. MacDERMOTT, R. BRADBROOK, F.X. KEELEY and A.G. TIMONEY
Bristol Urological Institute, Bristol, UK

INTRODUCTION

Previous studies suggest cardiac stress can result from absorption of glycine during TURP.

METHODS

250 patients were prospectively randomised. Changes in pre- and post-operative ECG and serum troponin I indicated cardiac stress. Intraoperative irrigating fluid absorption was measured with 1% ethanol as a marker. Immediately post-operation a visual analogue scale assessed charring, stickiness, bleeding and visual acuity.

RESULTS

67 (out of 245) patients experienced unfavourable outcome. 8 patients had significantly raised TNI. Logistic regression identified increasing age and blood loss were associated with unfavourable outcome. Raised Glycine assay was associated with ECG changes ($P = 0.001$) and with raised TNI levels (relative risk 10.71). Surgeons using glucose found more charring of tissue ($P = 0.05$) and also increased 'stickiness' ($P = 0.001$). However there was no difference with regard to bleeding, visual acuity, resection time or amount resected.

CONCLUSIONS

TURP has an effect on myocardium. Glycine absorption, increasing age and blood loss is associated with myocardial insult. The risk with increased blood loss is accumulative with each unit lost and blood loss or glycine absorption may explain the increase in mortality previously reported in TURP. Glucose is stickier and causes more charring than glycine, but does not effect operating times and is optically the same.

70

The cost of TURP versus conservative managements of benign prostatic disease

J.R.M. WILSON and R.O. PLAIL
Conquest Hospital, Hastings, UK

INTRODUCTION

TURP has been the gold standard for treatment of BPH against which other treatments have been compared. Surgical treatment has shown a rapid decline recent years paralleled with the increased use of pharmacotherapy. TURP produces a better result in terms of Qmax/Qave than oral medication but many practitioners see surgical management as an expensive option. We aim to show that TURP is a cost effective treatment of BPH.

METHODS

Using judgement analysis techniques a judgement tree was produced for surgical and different pharmacotherapeutic treatments of BPH. A literature search was performed to identify all complications and their respective prevalence. Costs of treatments and complications were identified using NHS Reference Costs 2003 and National Tariff 2004, with pharmaceutical costs identified from the British National Formulary.

RESULTS

Over five years the costs of TURP treatment was slightly less than pharmacological monotherapies (£1600 versus £1700). Dual therapy treatment as recommended in recent BAUS guidelines almost doubles the cost of the pharmacological treatment option.

CONCLUSION

The cost of TURP treatment compares very favourably with that of conservative pharmaceutical treatments over five years with the added benefits of improved flow and not having to self medicate.

71

Photoselective vaporisation of the prostate (PVP): a novel modality for the surgical management of BPH

T.R.G. LARNER, S.A.A. KHAN and S.W. ALKHAYAL
Department of Urology, Royal Sussex County Hospital, Brighton, UK

INTRODUCTION

We further evaluate photoselective vaporisation of the prostate (PVP) as a novel modality for the treatment of BPH.

PATIENTS AND METHODS

123 patients underwent PVP, 84 symptomatic voiders and 39 catheterised patients. Uroflow, IPSS, QOL and residual volume (RV) were recorded for symptomatic voiders. All patients underwent on table trans-rectal ultrasound (TRUS) volume estimation.

RESULT

Mean prostate volume and operative time for symptomatic voiders was 60.5 ml and 52 min.

Symptomatic voiders	Pre-op *n* = 84	3 months post-op *n* = 58	1 year post-op *n* = 26
IPSS	22	7.6	5.5
QOL	5	1.6	0.9
QMax (ml/sec)	7.7	19	17
RV (ml)	175	68	105

Catheterised patients mean prostatic volume was 68 ml and operative time 53 min.

Catheterised patients	Pre-op $n = 39$	3 months post-op $n = 30$	1 year post-op $n = 17$
IPSS	Mean length of catheterisation 5.4 months	5.3	4.6
QOL		0.9	0.5
QMax (ml/sec)		15	15
RV (ml)	1274	108	190

89% of symptomatic voiders and 74% of catheterised patients required overnight stay only and 80% of voiders and 77% catheterised patients required overnight catheters only.

CONCLUSION

Photoselective vaporisation of the prostate provides a safe and effective alternative to TURP with sustained urodynamic outcome to 1 year. The minimal bleeding allows short in-patient stay and catheterisation time.

72

A randomised trial comparing Greenlight® laser treatment and trans-urethral resection of the prostate (TURP) in patients

D.M. BOUCHIER-HAYES, P. ANDERSON, S. VAN APPLEDORN, P. BUGEJA and A.J. COSTELLO
Department of Urology, Royal Melbourne Hospital, Melbourne, Australia

INTRODUCTION

We assess the efficacy of Greenlight® laser photovaporization (Laserscope, San Jose) in comparison to TURP in a randomised trial.

PATIENTS AND METHODS

120 patients with urodynamically proven obstruction are randomised to undergo TURP or PhotoVapourization of Prostate (PVP). All undergo pressure-flow studies, measurement of prostate volume, International Prostate Symptom Scores (IPSS) and sexual bother scores pre-operatively and at 1, 3, 6 and 12 months. Length of catherisation time (LOC) and length of hospital stay (LOS) were evaluated.

RESULTS

To date 35 patients are evaluable. Both PVP and TURP produced equivalent significant improvement in flow rates and IPSSs, and significantly shorter LOC and LOS, with less cost by 25% and less adverse events in the PVP group.

	TURP ($n = 19$)	PVP ($n = 16$)	Change within group from baseline	Comparison between groups
Increase in flow ml/sec vs baseline	8.0 ± 5.9* (–1.4–16.7)	9.0 ± 8.9^ (–6–30)	*$P = 0.0001$ ^$P = 0.0005$	Not significant (n.s.)
% increase flow	152 ± 183 (–12–748)	137.5 ± 125.7 (–41–350)	$P < 0.001$	n.s.
Decrease in IPSS vs baseline	12.65 ± 10.3 (–5–30)	12.66 ± 7.72 (0–28)	$P < 0.0001$	n.s.
% decrease in IPSS	49.3 ± 40.8 (–27–93.3)	47.67 ± 27.3 (0–96.55)	$P < 0.0001$	n.s.
LOC (h)	46.53 ± 38.73 (16–192)	14.53 ± 7.4 (0–24)	n.a.	$P = 0.0013$
LOS (days)	3.65 ± 1.5 (3–9)	1.1 ± 0.23 (1–2)	n.a.	$P < 0.000001$

Results expressed as mean + SD (sample standard deviation) and (range). Statistical tests: student-t paired and unpaired.

CONCLUSIONS

This trial demonstrates that PVP produces equivalent improvements in flow rates and IPSS scores with markedly reduced LOS, LOC, adverse events and costs.

73

Seven years median follow up of bare fibre laser ablation of prostate with transurethral scraping (LAP/TUS)

A. JAIN, Y.E.T. ELMASRY, G.R. NOTTIDGE and T. SHAH
Department of Urology, Bradford Teaching Hospitals Foundation NHS Trust, Bradford Royal Infirmary, Bradford, UK

OBJECTIVE

To present medium term follow up results of 116 patients treated with LAP/TUS involving vaporisation and coagulation with KTP/YAG (40 W) and Nd/YAG (60 W) followed by scraping of the debris.

PATIENTS AND METHODS

116 consecutive patients (Mean age 70 ± 9) who underwent LAP/TUS at a single centre at least five years ago were assessed by uroflowmetry, International Prostate Symptom (I-PSS) and Quality of Life (QoL) scores. Results were compared with the prospectively recorded pre and 3 months post-operative values.

RESULTS

Mean prostate size was 38.2 g (±16.8). Only 12 (10%) patients required post-op irrigation and median post-op stay was 2 days (±1.4). 11 (10%) patients developed overactive bladder symptoms. 38 (32.7%) patients had died during the follow up period after a median post-op interval of 35 months (range 11–72) from unrelated causes. None required re-resection. Overall, 5 (4%) patients required long term catheter and 7 (6%) underwent re-operation during a mean/median follow up of 84 months (range 60–103 months). 62 out of 78 living patients completed the follow up. Results are tabulated below.

	Pre-op	3 months post-op	Last follow up (median 7 years)	% Improvement at 7 years post-op	Change in 3 months – 7 years (*P*-value) *t*-Test
Parameter	Mean ± SD	Mean ± SD	Mean ± SD	Mean	
I-PSS	21.7 ± 6.6	8.0 ± 6.5	10.2 ± 7.3	53.1	0.31*
QoL	4.4 ± 1.1	1.8 ± 1.7	1.9 ± 1.4	57.3	0.99*
PVR	169 ± 182	67.6 ± 82.2	62.2 ± 97.1	63.2	0.57*
Qmax	8.9 ± 3.6	16.0 ± 9.1	15.4 ± 9.9	72.9	0.57*
Qave	4.1 ± 1.9	8.0 ± 0.5	7.7 ± 6.3	88.1	0.32*

**Not significant.*
PVR, Post void residual; Qmax, Peak flow rate; Qave, Average flow rate.

CONCLUSION

LAP/TUS produces long lasting relief in BOO symptoms with 53–88% improvement in I-PSS scores and uroflowmetry parameters maintained even after seven years.

74

Relief of bladder outflow obstruction (BOO) following HoLEP and TURP: a pooled analysis of data from 4 randomized trials

P.J. GILLING, M.R. FRAUNDORFER, A.M. WESTENBERG, M.G. NEILL, C.M. FRAMPTON and K.M. KENNETT
Tauranga Hospital, Tauranga, New Zealand

INTRODUCTION

The effect of pre-operative prostate volume on relief of urodynamic obstruction following HoLEP is examined.

PATIENTS AND METHODS

Urodynamic and clinical data from the HoLEP and TURP arms of 4 RCTs was combined. The data was separated into groups based on prostate size (preoperative TRUS volume), <50 g, 50–75 g, >75 g. The values of Qmax, AUA and QOL score, TRUS volume, residual volume, PdetQmax and Schaffer grade were compared at baseline and 6 months postoperatively.

RESULT

Overall the mean PdetQmax were significantly less in the HoLEP arm – 26.3 + 12.7 cm H_2O ($n = 71$) compared with TURP – 39.6 + 15.6 cm H_2O ($n = 89$) at 6 months ($P < 0.001$). This effect was dependant on prostate size with no difference in relief of obstruction between TURP and HoLEP in the group <50 g, but a significant difference noted between 50–75 g ($P < 0.05$) and >75 g ($P < 0.001$). The pathologic weight of retrieved tissue was significantly greater and the TRUS volume at 6 months significantly less overall ($P < 0.01$) in the HoLEP group but a significant difference was only seen in the group >75 g when analysed separately.

CONCLUSION

Urodynamic relief of obstruction is superior with HoLEP compared to TURP but only with prostate volumes greater than 50 g.

75

ProstaLund feedback treatment (PLFT) vs TURP: a prospective randomized muliticenter study with 36 month follow up

J. NORDLING, L. WAGRELL, T. LARSON, J. DUELUND, K. KROYER and A. MATTIASSON
Herlev Hospital, Denmark, Uppsala University Hopsital, Sweden, Mayo Clinic, Scottsdale, AZ, USA, Frederiksbergs Hospital, Denmark, and Lund University Hospital, Sweden

OBJECTIVE

To evaluate clinical outcome of BPH treatment PLFT® vs. TURP, 36 months post treatment.

METHODS

A randomized multicenter study (10 centers). IPSS, QoL, Qmax, TRUS and adverse events were evaluated. Patients were followed up 3, 6, 12, 24 and 36 months post treatment. The intraprostatic temperature guided the microwave power and treatment time. A total of 154 patients with BPH were randomized to PLFT or TURP (2 : 1).

RESULTS

Considerable improvements compared to baseline were observed in IPSS, QoL and Qmax for both PLFT and TURP. At the 36 month follow up IPSS were 8.2 in the PLFT group and 5.0 in the TURP group, QoL were 1.2 and 1.0 and Qmax were 11.9 ml/s and 13.5 ml/s in the PLFT and the TURP group respectively. Adverse events ongoing after 12 months or arising during the period 12–36 months were more frequent in the TURP group. In the TURP group impotence (15%) and micturition urgency (13%) were most common, while impotence (8%) and PSA increase (5%) were most common in the PLFT group.

CONCLUSIONS

Outcome of microwave thermotherapy with PLFT is comparable with the results seen after TURP 36 months post treatment. PLFT seems to have a favourable safety profile.

FUNDING

ProstaLund Operations AB, Lund, Sweden

76

A pilot study to evaluate the safety and efficacy of a new transurethral catheter radiofrequency ablation device (TruCath™) for the treatment of benign prostatic hyperplasia

P.J. GILLING, M.R. FRAUNDORFER, J.P.W. HEATON, L. EMERSON, S. ROBB and K.M. KENNETT
Tauranga Hospital, Tauranga, New Zealand

INTRODUCTION

The initial patient data following use of a new, inexpensive and simple technique for the heat-treatment of BPH are described.

PATIENTS AND METHODS

The TruCath™ consists of a 22FR silicone catheter with 2 removable ring electrodes placed below the balloon and attached to a monopolar radiofrequency generator. Baseline evaluation included IPSS, IIEF and QOL scores and Trans Rectal Ultrasound measurements which were repeated at 1, 3 and 6 months. Patients also completed a visual analogue score to establish postoperative satisfaction.

RESULT

Eight patients have been treated. Six patients required intermittent catheterisation for 1–3 weeks. IPSS scores decreased from a mean of 23.6 (19–31) at baseline to 14 (7–26) at 3 months and 14 (5–24) at 6 months. Mean QMax values increased from 7.8 ml/sec (5–10) at baseline to 11.5 ml/sec (6–20) at 3 months and 11.4 ml/sec (6–18) at 6 months. The PSA level was elevated at 1 month but had returned to pretreatment levels by 3 months in all patients. Post void residuals remained unchanged at 6 months but prostate volume showed a mean 22% reduction at 6 months (59.8 g down to 47.4 g).

CONCLUSION

The early results of the TruCath™ are promising.

FUNDING

Cosman Company

Wednesday 29 June 15.00–16.00
Renal Cancer – The Right Treatment for the Right Tumour
Chairmen: C. Anderson and N. Soomro

99

Microarray expression profiling and array comparative genomic hybridisation of renal cell carcinoma

G.J. BURTT, A. VEERAKUMARASIVAM, N. THORNE, I.G. MILLS, D.E. NEAL and J.D. KELLY
Departments of Oncology and Urology, University of Cambridge, Cambridge, UK

INTRODUCTION

Array CGH and expression profiling techniques enable high throughput analysis of gene expression patterns and DNA copy number changes. Using high resolution genome wide profiling techniques we aimed to classify renal tumours and identify putative genes relating to clinical outcome.

METHODS

Total RNA and genomic DNA were extracted from 120 renal tumour and paired normal samples. Messenger RNA was amplified and labelled with Cy3 and Cy5 fluorescent dyes and hybridised to a 22 k gene oligonucleotide microarray (Agilent Human 1a version 2). DNA was labelled and hybridised in competition with normal human DNA onto a 1 megabase cDNA microarray. Data was normalised and analysed using the R software environment.

RESULTS

Copy number changes classify tumours in accordance with the conventional genetic Heidelbererg criteria. Unsupervised hierarchical clustering of expression profiles can successfully genotype renal tumours according to clinicopathological aggressiveness. A gene list derived by supervised clustering methods at probability >10–4 identified genes with the greatest influence on disease outcome.

CONCLUSION

High throughput CGH and expression profiling techniques can classify renal tumours according to genotype. Analysis of expression changes within regions of genomic amplification and deletion will enable functional pathways which are integral to tumour progression and clinical outcome to be identified.

FUNDING

British Urological Foundation, Shackman Charitable Trust, Addenbrooke's Hospital Charities Trust

100

Oncological safety of laparoscopic radical nephrectomy: the first 104 patients

D.A. RIX, T. DORKIN, D.J. THOMAS and N.A. SOOMRO
Freeman Hospital, Newcastle Upon Tyne, UK

INTRODUCTION AND METHODS

104 consecutive laparoscopic radical nephrectomies were performed between March 2001 and September 2004 in our centre. Peri-operative and oncological outcomes were reviewed from prospectively collected data.

RESULTS

Mean age was 63 years. Mean tumour size was 4.9 cm. Mean operative time was 179 minutes. Mean specimen weight was 492 g. 4 patients required open conversion. 13 patients required blood transfusion. 3 patients returned to theatre. 2 patients died within 30 days of surgery. Median post-operative stay was 4 days. Histology showed 85 patients had RCC (64 pT1, 3 pT2, 11 pT3a, 7 pT3b), 11 oncocytoma, 2 angiomyolipoma, 4 benign cystic disease, 1 XPN and 1 TCC. 2 cases had positive margins (one pT3b and one pT3a tumour). Mean follow-up is 12 months. One patient has developed bone metastases. Two patients have developed metastatic peritoneal deposits (neither had a positive margin). All four patients who had either a positive margin or developed metastatic peritoneal deposits had upper pole tumours, diameter of 5.5 cm or more.

CONCLUSION

A satisfactory oncological outcome can be achieved with laparoscopic radical nephrectomy for renal cell carcinoma. Caution is required when dealing with larger upper pole tumours.

101

Selection criteria for the use of cardio-vascular bypass in the removal of renal cell carcinoma with IVC extension

A. KELKAR, M.D. DOOLDENIYA, G. SMITH, N. MOAT and T. CHRISTMAS
Charing Cross Hospital/Hammersmith Hospitals NHS Trust and Royal Brompton Hospitals, London, UK

INTRODUCTION

The only chance of cure of renal cell carcinoma (RCC) with IVC extension is by surgery. However, this procedure can be associated with major morbidity and even mortality. Our aim was to determine criteria that select patients best operated on using cardio-vascular bypass.

PATIENTS AND METHODS

From 1994–2004, 72 patients with RCC and IVC extension underwent radical nephrectomy and thrombus excision. High risk cases were evaluated by gated MRI and trans-oesophageal echocardiogram (TOE). 27 patients with evidence of extension into the right atrium, hepatic veins or contra-lateral renal vein, or with bulky supra-hepatic vein disease and/or clear evidence of adherence to the IVC, underwent surgery on cardiovascular bypass with cardioplegia in 25 (93%).

RESULTS

One patient died per-operatively as a result of tumour disintegration within the right atrium just before going onto bypass. The mortality rate was therefore only 1.4%.

CONCLUSION

The use of pre-operative MRI and TOE to establish increased risk factors enables more precise selection of patients for bypass which has translated into a very low operative mortality rate in the excision of RCC with IVC extension.

102

Open partial nephrectomy (OPN): outcomes from two UK centres

E.R. RAY*, B. TURNEY†, R. SINGH*, A. CHANDRA*, D. CRANSTON† and T.S. O'BRIEN*
**Guy's and St. Thomas' Hospital, London, UK and †The Churchill Hospital, Oxford, UK*

INTRODUCTION

A contemporary analysis of the outcomes of OPN is timely as minimal access surgery is being widely advocated.

METHODS

95 attempted partial nephrectomies were reviewed in 86 patients drawn from two UK centres.

RESULTS

The indication for surgery was von Hippel Lindau disease (VHL) in 10/95 (11%); imperative in 42/95 (44%); elective in 39/95 (41%); and other in 4/95 (4%). Median warm/cold ischemia time was 21/38 minutes (range 9–120 minutes). OPN was completed in 90/95 (95%). Major complications included 4/95 (4%) converted to nephrectomy; 10/95 (11%) positive margins; 3/95 (3%) re-explored for primary bleeding and 2/95 (2%) urine leaks. 26/31 (84%) complications developed in patients where the indication was imperative/VHL. 4/95 (4%) required post-operative dialysis, in two this was temporary. In patients with baseline renal impairment, creatinine returned to baseline in 8/18 (44%). Interestingly, one centre had no urine leaks and no nephrectomies whilst the other had no re-explorations and half the rate of positive margins. 80% of specimens were malignant. Median post-operative stay was 6 nights (range 3–50). Median follow up is 20 months (range 1–62 months): no patient has died but two patients have recurrence and 4/95 (4%) are now on permanent dialysis.

CONCLUSIONS

Open partial nephrectomy is complex but offers excellent short-term cancer control with an acceptable rate of complications.

103

Long term outcome of surgical excision of adrenal metastasis and recurrences following nephrectomy for renal cell carcinoma (RCC)

B. KHOUBEHI, M. DOOLDENIYA, T. EISEN, M. GORE and T. CHRISTMAS

INTRODUCTION

Surgery in patients with RCC who have synchronous adrenal metastasis or in those with metachronous recurrence remains controversial. We have examined our aggressive surgical policy towards treating these patients.

PATIENTS AND METHODS

We report on 32 patients who had adrenal metastasis at the time of nephrectomy and 26 who had recurrence of their disease after initial nephrectomy and had further surgical excision. In the group with synchronous metastasis, 10 patients had adrenal metastasis only and 22 had disease in the adrenal and elsewhere. In the group with metachronous recurrences 7 were in renal bed (RBR), 10 in local lymph node (LNR) and 9 had solitary distant recurrence (DR).

RESULTS

The survival rate for patients with synchronous metastasis at median follow up of 65 months, was 53%, however 90% of those with adrenal metastasis were alive compared with 36% of those with metastasis in adrenal and other sites.

In the group with metachronous recurrences, time to recurrence was 67, 19 and 30 months for RBR, LNR and DR, respectively. The median follow-up was 70 months. The cancer specific survival at 70 months was 89%, 75% and 64% for RBR, LNR and DR, respectively.

CONCLUSION

In patients with synchronous adrenal metastasis only surgical excision offers excellent long term survival. In highly selected patients with good performance status and single site metachronous recurrence, surgical excision seems to be beneficial irrespective of site of recurrence.

104

Description of radical nephrectomy practice and outcomes in England: 1995–2002

M.C. NUTTALL, P. CATHCART, J.P. VAN DER MEULEN, D. GILLATT, G. McINTOSH and M. EMBERTON
Clinical Effectiveness Unit, Royal College of Surgeons of England, London, UK

INTRODUCTION

To describe trends in radical nephrectomy (RN) practice in England between 1995 and 2002.

METHODS

17 308 patients were identified from the Hospital Episode Statistics database of the Department of Health who had an ICD-10 diagnosis code for malignant neoplasm of the kidney, renal pelvis or ureter, and a procedure code describing total/partial excision of the kidney.

RESULTS

Patient age and the proportion who were men have not changed. Those admitted as an emergency fell from 14.0% to 7.5% ($P < 0.001$). Waiting time duration increased by almost 6 days ($P < 0.001$), whereas length of stay fell from 11.7 days in 1995 to 10.8 days in 2001 ($P < 0.001$). In-hospital mortality fell from 2.0% to 1.5% ($P = 0.134$). In-hospital mortality and length of stay were higher in older patients and those admitted as an emergency. The annual number of RNs increased from 2254 in 1995 to 2671 in 2001. Mean annual hospital volume increased from 17 in 1995 to 24 in 2001. Annual numbers of laparoscopic RNs increased from 7 in 1995 to 84 in 2002.

CONCLUSION

Annual numbers of RNs in England have increased by almost 20% and annual hospital volumes by about 40%. There was a large proportional increase in laparoscopic procedures.

FUNDING

Royal College of Surgeons of England and Bob Young Research Fellowships.

Wednesday 29 June 16.00–17.00 Bladder Cancer – Diversions and Diversity Chairmen: M. Bailey and M. Wallace

110

Radical cystectomy: defining the threshold for a surgeon to achieve optimum outcomes

J.E. McCABE, A. JIBAWI, S. WILLMOTT and P.M. JAVLE
Michael Department of Urology, Leighton Hospital, Crewe, UK

INTRODUCTION

A relationship between increasing surgical case volume and improved outcomes in radical urological surgery has been suggested in recent studies. However, the definition of 'high' and 'low' volume surgeons has always been pre-defined and the minimum caseload required for a surgeon to achieve optimum outcomes has not been rigorously examined.

METHODS

All cystectomies performed for bladder cancer in England over 5 years were analysed from Hospital Episode Statistics (HES) data. Statistical analysis was undertaken to describe the relationship between each surgeon's annual case volume and 2 outcome measures: in-hospital mortality rate (MR) and hospital stay.

RESULTS

A total of 6308 cystectomies were performed, the mean number of surgeons performing them annually was 327 with an overall MR of 5.53%. A significant inverse correlation (–0.968, $P < 0.01$) was found between case volume and MR. Applying 95% confidence interval estimation, the minimum caseload required to achieve the lowest MR was 8 procedures per year. Increasing caseload beyond 8 operations per year did not produce a significant reduction in MR.

CONCLUSION

Analysis of HES data confirms an inverse relationship between surgeon's caseload and mortality for radical cystectomy. A caseload of 8 operations per year is associated with the lowest MR.

111

A comparison of methods of urinary diversion following cystectomy in a single centre

B.E. DRAKE and D.A. GILLATT
Bristol Urological Institute, Southmead Hospital, Bristol, UK

OBJECTIVE

To analyse our results of cystectomies for bladder cancer; determining the difference, if any, in outcome between ileal conduit, continent cutaneous diversion and orthotopic neobladder.

PATIENTS AND METHODS

345 patients underwent cystectomy over a 14 year period. The records of 273 patients were available for analysis (79%).

RESULTS

134 underwent ileal conduit formation, 113 orthotopic neobladder and 26 Mitrofanoff. The Mean follow up was 38 months (12 days–156 months). The total mean operative time was 272 minutes with significant difference between groups ($P < 0.01$). When neobladders and ileal conduits were compared there was no difference in units transfused ($P > 0.1$). In total 36% of patients experienced early post operative complications with 3% requiring a return to theatre. There was a 1.5% 30 day mortality. 92% of neobladders reported full daytime continence with 22% reporting occasional nocturnal enuresis. 96% of Mitrofanoff patients were continent however complications and blood loss were higher in this group. 72% of patients remained disease free to the end of follow up. Those having recurrence developed it at a median of 9 months.

CONCLUSION

Patients can be offered a choice of diversion with operative outcome and morbidity being comparable between neobladder and ileal conduit.

112

Selective organ preservation in muscle-invasive TCC of the bladder: a biological approach

A.J. BIRTLE, A.H. HORWICH, D.P. DEARNALEY, R. SHEPHERD and R.A. HUDDART
Academic Urology Unit, Royal Marsden Hospital, Downs Road, Sutton, UK

INTRODUCTION

1400 cases of T2/T3 TCC bladder are diagnosed in the UK annually. Cystectomy alone is associated with 20–30% local failure rate and raises QoL issues, as reconstruction may not be available/possible. Neo-adjuvant chemotherapy (neo-CT) has a 5% 5 year absolute survival benefit. (ABC Meta-analysis Collaboration. Lancet. 2003; 361: 1927–34). Pathological response to treatment is associated with outcome (Splinter et al. J Urol. 1992; 147: 606–8). A pilot study of selective bladder preservation, giving radiation to patients with pathological down-staging after neo-CT is discussed.

MATERIALS AND METHODS

Patients with T2/T3 TCC bladder received 3 cycles of neo-CT (accelerated MVAC,) followed by rigid cystoscopy 2 weeks later. Patients down-staged to ≤pT1 received radical radiotherapy (64 Gy/32 fractions). Cystectomy was reserved for poor pathological responders (≤pT2). Response and toxicity were evaluated.

RESULTS

25 patients were treated (2000–2004). PCR after Neo-CT was seen in 12/25 patients (48%), and pTa/pT1 in a further 7/25 (28%). 17 patients (68%) have no sign of recurrence at a median of 12 months (range 2–28) from treatment, with 1 grade 4 bowel toxicity reported.

CONCLUSION

Selective bladder preservation in patients with favourable pathological response to neo-CT represents a realistic option to cystectomy and merits further evaluation in a multi-centre study.

113

The role of palliative radiotherapy in bladder cancer

B.J.R. BARRASS, J. OSTROWSKI and K.K. SETHIA
Norfolk and Norwich University Hospital, Norwich, UK

INTRODUCTION

Patients with advanced bladder cancer who cannot tolerate radical treatment frequently receive a sub-radical of dose radiotherapy to palliate symptoms. We investigated how effectively this treatment improved symptoms and if morbidity was reduced compared to radical therapy.

PATIENTS AND METHODS

Notes were reviewed for 40 patients who received either palliative or radical radiotherapy for bladder cancer. We recorded the tumour grade and stage, survival outcome, morbidity and symptom control for both doses.

RESULTS

There was no significant difference in tumour grade or stage between patients receiving radical or palliative dose radiotherapy. The mean 18 month survival was 15% and 87% in those receiving palliative or radical treatment respectively. Haematuria was improved in 71% receiving palliative treatment compared to 91% receiving radical therapy. Other symptoms improved in 16–30% but also developed as adverse effects 9–18%. Diarrhoea occurred in 26% and 47% of those receiving palliative and radical therapy respectively.

CONCLUSION

Palliative radiotherapy appears to palliate bladder cancer symptoms effectively, but this must be weighed carefully against the adverse effects which, although reduced compared to radical therapy, were severe enough to warrant admission in some cases. Quality of life in the unfit patient group has to maximised given their poor survival.

114

Polarisation of a T-helper cell immune response by CpG-oligonucleotides: a potential immunotherapy for bladder cancer

H. ATKINS, J.A. KIRBY, B. BAVIES and J.D. KELLY
Newcastle University, Newcastle upon Tyne, UK

BCG as well as other microbial stimuli differentially stimulate Toll-like receptors (TLRs) to prime the T helper cell response involving antigen presenting dendritic cells (DC). Un-methylated CpG in pathogenic DNA is a ligand for TLR9. The aim of this study was to determine the DC immune mediated response to CpG oligonucleotide.

METHODS

Murine bone marrow DCs were cultured *in vitro* and stimulated with BCG, CpG oligonucleotides or a control stimulus (LPS). Maturation of DCs was analysed by up-regulation of costimulatory molecules and maturation markers. DC induced T-cell proliferation was assessed using a mixed lymphocyte response (MLR) assay.

RESULTS

BCG, CpG and LPS were potent stimuli for DC activation inducing the mature DC phenotype. Stimulation with BCG induced an IL-12 and IL-10 response in TLR 4 wild type (wt) and mutant cells. CpG-oligonucleotides induced IL-12 but not IL-10 ($P < 0.0001$). BCG and CpG induced T-cell proliferation in the MLR assay.

CONCLUSION

BCG works through multiple TLRs to induce a potent but non-specific Th cell immune response. We have shown that an oligonucleotide derivative (CpG) signalling via TLR9 can induce a polarised and specific immune response. CpG-oligonucleotides may be beneficial for intravesical therapy of bladder cancer.

FUNDING

CRUK

115

COX inhibition: a potential mechanism for increasing the efficacy of BCG immunotherapy for bladder cancer

S.J. DOVEDI, J.A. KIRBY, H. ATKINS, B.R. DAVIES and J.D. KELLY
University of Newcastle, Newcastle upon Tyne, UK

PURPOSE

Intravesical Bacillus of Calmette and Guerin (BCG) therapy is the principal treatment for high risk non-invasive urothelial carcinoma and carcinoma in situ of the urinary bladder. However, up to 40% of patients fail to respond to this treatment. In this study the potential for inhibition of PGE2 production by BCG-treated dendritic cells (DC) was studied in the context of preferential polarisation of the immune response towards a cancer-clearing TH-1 response.

MATERIALS AND METHODS

Murine bone marrow-derived DC were cultured with IL-4 and GM-CSF for 7 days. Production of IL-10 and IL-12 were measured after DC stimulation with BCG in the presence IL-10, PGE2, anti-IL-10 antibody, NS-398 and Indomethacin.

RESULTS

PGE2 stimulated a dose-dependent increase in the levels of IL-10 produced by BCG-activated DC ($P < 0.01$); Addition of IL-10, reduced IL-12 production ($P < 0.001$), whilst blockade of IL-10 increased IL 12 levels ($P < 0.05$). The COX-2 selective inhibitor NS-398 caused a dose-dependent increase in the concentration of IL-12 produced by BCG-activated DCs ($P < 0.01$); this effect was also seen with the partially selective COX-1 inhibitor Indomethacin ($P < 0.05$).

CONCLUSIONS

Inhibition of PGE2 synthesis by COX inhibitors favoured production of IL-12 by BCG-activated DC; potentially polarising the immune system during BCG therapy towards an efficacious TH-1 response.

FUNDING

Cancer Research UK

Thursday 30 June 09.30–10.45 Paediatrics – Outflow and Outcomes Chairmen: P. Malone and D. Thomas

124

Single centre experience of nurse delivered circumcision service by Plastibell technique – review of 8 year results

V. PALIT, D. MENNABHI, I. TAYLOR, M. VALLANCE, Y. ELMASRAY and T. SHAH
Bradford Royal Infirmary, Bradford, UK

INTRODUCTION

Recognizing the need for providing safe circumcision for religious reasons in a high Muslim population area Bradford Hospitals NHS trust agreed to a pioneering service. A group of voluntary nurses were trained on Plastibell® technique by a Consultant Urologist to provide the service on a no-profit basis.

OBJECTIVES

To review the service and audit results from July 96 to April 2004.

SUBJECTS AND METHODS

Plastibell circumcision (under ring block with 1% lignocaine) was offered to babies between 6–16 weeks old. Information video was provided to parents prior to the procedure. Post procedure telephone follow up was arranged on day 1 and 6. Between July 1996 and April 2004 we performed 879 circumcisions.

RESULTS

106 babies (12%) required some follow up.

Table: Plastibell circumcisions follow up

Year	No. of Patients	Post procedure bleeding requiring stitch	Post procedure bleeding requiring conservative management	Antibiotics for wound infection	Ring removed for ring migration/Incomplete/ delayed separation	Follow up for reassurance	Transferred to Leeds for severe bleeding
July 96– April April 04	879	14 (1.59%)	10 (1.13%)	16 (1.85%)	37 (4.2%)	27 (3.01%)	2 (0.22%)

CONCLUSION

Plastibell technique is simple technique easily learned and safely practised by nurses with very high degree of patient satisfaction. Complication rate more noticeable during early period was quite acceptable.

125

Which approach? transperitoneal or retroperitoneal, for paediatric laparoscopic nephrectomy – 100 consecutive cases

M.S. GUNDETI, Y. PATEL, D.T. WILCOX, P.G. DUFFY, P.M. CUCKOW and I. MUSHTAQ
Great Ormond Street, Guy's and Middlesex Hospital (Institute of Urology), London, UK

OBJECTIVE

To evaluate the outcome of l00 consecutive paediatric laparoscopic nephrectomies,and determine the best approach.

PATIENTS AND METHODS

97 children undergoing laparoscopic nephrectomy over 36-months were reviewed. Laparoscopy was performed by either, the transperitoneal (TP) or posterior prone retroperitoneal (PPR) approach, based upon the preference of the surgeon.

RESULTS

A total of 100 procedures were successfully completed, including 5 who underwent bilateral synchronous nephrectomy. The median age at surgery was 5.5 years (7 months–17 year). The indications were: dysplasia ($n = 15$), MCDK ($n = 23$), obstructive uropathy ($n = 14$), reflux nephropathy ($n = 31$), ESRD ($n = 14$) and duplex ($n = 3$). The median renal length was, cam (2–19). A near complete ureterectomy was carried out in refluxing kidneys with both approaches. The PPR approach ($n = 49$) had a lower operative time (92 min) than TP (114 min). Median opiate analgesic

requirement was greater in TP group than in PPR ($P = 0.02$). The Median length of stay was 48 hours, regardless of the approach. The complications were minimal (6%) and was equal.

CONCLUSIONS

Laparoscopic nephrectomy is safe and well-established procedure in children. There appears to be no major advantage of one approach over the other. The PPR approach has benefit of maintaining the intactness of peritoenal cavity in ESRD, allowing immediate peritoneal dialysis.

126

The role of bulking agents in the management of Urinary incontinence in children with Exstrophy–Epispadias Complex

R. HAMID, T. BURKI, I. MUSHTAQ, P. DUFFY and P. RANSLEY
Great Ormond Street Hospital for Children, London, UK

INTRODUCTION

Urinary incontinence (UI) is a major problem in patients with Exstrophy-Epispadias Complex (EEC). We evaluated our results with the use of Macroplastique® in this condition.

MATERIALS AND METHODS

Fifty-two patients were identified who had underwent injection of Macroplastique® to the bladder neck between 1991–2004. Thirty-four patients had bladder exstrophy (BE) and 18 had primary epispadias (PE). There were 41 boys and 11 girls. Mean age at first injection was 6.6 years (range 3.6–16.7 years). Twenty patients were injected once, 10 patients twice, 13 patients thrice and 9 had more than 3 injections. Continence was defined as complete dryness both day and night.

RESULTS

Mean follow up was 4.7 years (range 0.5–9 years). Nine of 52 patients (17%) were completely dry; (5/18 PE 28%, 4/34 BE 12%). Continence improved significantly in a further 19/52 (36%) of our patients. 24/52 (46%) did not improve according to our definition. Of the 9 patients rendered dry, 2 received one injection, 2 were injected twice, 4 had three whilst one received 6 injections.

CONCLUSIONS

Macroplastique® injection to the bladder neck in patients with EEC is a reasonable option. However, the parents and children should be given a realistic expectation of success.

127

Congenital Adrenal Hyperplasia and Lower Urinary Tract Symptoms

M.C. DAVIES, N.S. CROUCH, C.R.J. WOODHOUSE and S.M. CREIGHTON
Academic Department of Obstetrics & Gynaecology, University College London, London, UK

INTRODUCTION

Feminising surgery in infancy is current standard practice for Congenital Adrenal Hyperplasia. One of the indications for surgery is to reduce urinary symptoms. This study looks at urinary symptoms in adult women with CAH.

PATIENTS AND METHODS

A case-control study was performed of 19 adult women with CAH of whom 16 had undergone childhood feminising genital surgery. Age matched females without CAH were also recruited. Subjects and controls completed the Bristol Female Lower Urinary Tract Symptoms (BFLUTS) questionnaire.

RESULTS

Urge incontinence was reported in 13 (68%) of subjects and 3 (16%) of controls ($P = 0.003$). Stress incontinence was present in 47% of subjects and 26% of controls ($P = 0.31$). Control results were comparable to those documented in larger studies on normal populations. Nine of the subjects felt that their urinary symptoms had an adverse effect on their lives, compared with only 1 of the controls ($P = 0.008$).

CONCLUSION

Patients with a diagnosis of CAH are more likely to suffer from significant urinary symptoms than normal controls. At present it is not clear whether this is due to surgery or the effect of CAH. In at least two thirds of patients, surgery has not achieved the objective of reducing urinary symptoms.

128

Genital sensation following childhood feminising genitoplasty

N.S. CROUCH, C.L. MINTO, L.-M. LIAO, C.R.J. WOODHOUSE and S.M. CREIGHTON
Elizabeth Garrett Anderson Hospital, London, UK; Institute of Urology, The Middlesex Hospital, London, UK

INTRODUCTION

Children born with ambiguous genitalia routinely undergo feminising genitoplasty surgery to achieve a more feminine appearance. This standard practice remains highly controversial with no long-term objective data on sensation to the genital area, until now.

PATIENTS AND METHODS

We recruited 28 adult women with 21-OH Congenital Adrenal Hyperplasia (CAH), who had undergone feminising genital surgery in childhood, to assess clitoral and vaginal thermal and vibratory sensation using a GenitoSensory Analyzer (GSA Medoc Ltd). Seven normal controls without CAH were recruited.

RESULTS

Clitoral testing demonstrated a significant difference for threshold sensation to warmth ($P = 0.002$), cold ($P < 0.001$) and vibration ($P = 0.037$), with the CAH group having poorer sensation. Sensation was measured to the upper vagina, which had not been surgically corrected, in 18 patients and 6 controls, with no significant difference observed.

CONCLUSIONS

These results show that clitoral sensation is markedly impaired in women who have undergone feminising surgery in childhood. No difference was observed in the vagina suggesting impaired sensation is associated with previous surgery. Genital sensation is an important factor in female sexual function. These striking findings must be evaluated further in light of the current contentious debate regarding the policy of routine childhood feminising genitoplasty.

129

Female adult outcomes after anorectal malformation repair

M.C. DAVIES, D.T. WILCOX, C.R.J. WOODHOUSE and S.M. CREIGHTON
Academic Department of Obstetrics & Gynaecology, University College London, London, UK

INTRODUCTION

This study aims to assess the long-term outcomes of female adults who were born with anorectal malformations.

PATIENTS AND METHODS

Patients were identified and sent questionnaires assessing urinary, bowel, gynaecological and sexual function. Patients were requested to attend clinic for further questioning and examination.

RESULTS

Questionnaires were sent to 26 females and 19 were returned completed (73%). Medical records of the 19 patients aged between 18 to 36 years treated at one institution from 1968 to 1986 were retrospectively reviewed. Mean patient age at the time of this review was 23.6 years. Eight were identified as having a low ARM, 6 high ARM and 5 had a cloacal anomaly. 7 out of the 19 (37%) were incontinent of urine, the remaining 12 were dry, 2 using a mitrofanoff and 2 intermittently self catheterised. 8 of the 19 were continent of faeces (42%), a further 3 were socially continent with stomas and 8 were incontinent of faeces. 12 of the 19 were sexually active (63%), and of these 3 had become pregnant. One underwent a termination and the other 2 had vaginal deliveries.

CONCLUSIONS

Comprehensive data on long-term outcomes after anorectal malformation repair are limited and these preliminary results are encouraging.

130

Single stage perineal urethroplasty with double breasting and sphincteroplasty for continence in female epispadias

M. PATNI, A. BHAT, N. JAIN, P. SINGHLA and G. SAXENA
S.P. Medical College Bikaner (Rajasthan), India

INTRODUCTION AND OBJECTIVE

To evaluate the results of single stage new technique of perineal urethroplasty with double breasting of urethra & bladder neck in female epispadias.

PATIENTS AND METHODS

We managed 4 cases (age 3, 11, 12 & 23 years) of severe female epispadias with incontinence & genital deformity since 1991. Perineal urethroplasty with double breasting, sphincteroplasty & genitoplasty was done in all.

TECHNIQUE

The urethral plate & bladder neck was mobilized from surrounding tissue after giving incision at the margins of urethral plate. Urethral mucosal strip of about 6–7 mm was denuded from bladder neck to lower end of urethral plate on the lateral edge. Urethroplasty was done in two layers with double breasting of urethral muscle margin from bladder neck to the neo-meatus. The corpora were mobilized partially from the pubic symphysis & sutured over the urethra. Pelvic floor was repaired between the anterior vaginal wall & urethra.

RESULTS

Three patients were fully continent & one was partially continent with a dry interval of 4–5 hours in follow up period of 3–10 years. One patient had enuresis, which responded to imipramine.

CONCLUSIONS

The technique utilizes both bladder & urethral factors for continence & is effective both for continence & cosmetic appearance.

131

Long-term outcomes of ureterocystoplasty

R. HAMID, N.S. JOHAL, Z. ASLAM and P.G. DUFFY
Great Ormond St Hospital, London, UK

INTRODUCTION

Many institutions have reported varied success with ureterocystoplasty. We report our long-term outcomes with ureterocystoplasty.

METHODS

We retrospectively analysed the records of ureterocystoplasties performed at our institution from 1990–2002. A total of 16 procedures were undertaken (M : F = 12 : 4). Ten children had posterior urethral valves; 3 with bladder exstrophy; 2 had anorectal anomaly and 1 with ectopic ureter. Mean age at operation was 5.4 years (0.5–13.25). All patients had pre-operative ultrasound scan, urodynamic studies with radio-nucleotide scanning.

RESULTS

The follow-up range was 0.5–11.5 years (mean = 4.5 years). Ten patients had ureterocystoplasty (5 with Mitrofanoff procedure). One patient had bilateral ureteric re-implantation with ureterocystoplasty. Thirteen patients (81%) did not require further augmentation surgery. Eleven of these 13 patients continued to show stable compliant bladders with good capacity for effective bladder management while the remaining two patients showed minor instability. The remaining three patients had dilated upper tracts with high-pressure poorly compliant bladders and were symptomatic with recurrent UTI and had ileocystoplasty performed (2 with Mitrofanoff). Subsequent post-operative nucleotide scans in these three patients have shown stable upper tracts with good drainage.

CONCLUSIONS

We conclude that ureterocystoplasty provides durable clinical and urodynamic improvement, when used for bladder augmentation.

Tuesday 28 June 09.30–10.30
Basic Science – Physiology
Chairmen: M. Drake and C. Fowler

P1

Perineal external sphincters originate from leg musculature

P.V. VALASEK, D.J.R.E. EVANS, F.M. MAINA, M.G. GRIM, J.J.E. ELKABIR and K.P. PATEL
Northwick Park and St. Mark's Hospitals, Urology, London, UK

INTRODUCTION AND OBJECTIVE

Striated skeletal musculature of the anus and urethra is thought to develop from cloacal sphincter muscle whose developmental origin is however not known.

METHODS

In vivo somitic substitution (chick/quail) was used for tissue fate mapping. Early myogenic events were studied by mRNA detection for Pax3/7 and MyoD genes. Additionally experimental surgical leg bud ablations and genetic mutants (chick limbless, mouse cMet and p63 null) were studied.

RESULTS

Cloacal muscles are formed from somites 30–34 which largely overlaps with leg muscles somites (26–33). Somitic cells migrate into the leg, form ventral and dorsal muscle masses (future flexors and extensors). Proximal part of the ventral muscle mass extends towards the midline cloaca, separates from the leg and locally differentiates into cloacal muscles. Same mechanism applies to mouse – a mammalian model. cMet null mouse lacking all migratory musculature (limbs, diaphragm, tongue) lacks also the cloacal/perineal muscles, confirming the migratory mechanism. Leg bud ablation results in absence of ipsilateral cloacal muscles. Genetic mutants lack these depending on the degree of the proximal leg field development.

CONCLUSION

External striated urethral sphincter develops from the ventral muscle mass of the leg. We are currently studying this process also in human embryos.

FUNDING

Wellcome Trust

P2

Presence of non-neuronal muscarinic cholinergic system in the rat urethral sphincter complex

W. PRADIDARCHEEP, N.F. DABHOIWALA, and W.H. LAMERS
**Departments of Anatomy & Embryology and Urology, Academic Medical Center, University of Amsterdam, The Netherlands, †Departments of Anatomy, Faculty of Medicine, Srinakharinwirot University, Bangkok, Thailand*

The present study was undertaken to investigate the urethral sphincter complex (USC; urothelium, smooth and striated muscles) for the presence of a non-neuronal muscarinic system. The USC of 6 male and 4 female rats were stained immunohistochemically for the presence of the M1-M5 subtypes of muscarnic receptors (MRs), choline acetyltransferase (ChAT) and the vesicular acetylcholine transporter (VAchT). Analysis of immunostaining was also performed. All cholinergic components (MRs, ChAT and VAchT) are present in the USC. Sex difference in the distribution of all components is absent. In the urothelium M1, M3 and M5 MRs are expressed strongly but M2 and M4 MRs are weakly present and absent, respectively. M4 subtype is also undectable in the muscle cells. All the other four MRs are expressed less intensely in the smooth muscle cells compared to the striated cells. CHAT and VAchT are expressed in the urothelium, suburothelial gland and in the striated, but not smooth muscle cells of the USC. This study confirmed the presence of a 'non-neuronal muscarinic cholinergic system' in the USC. This new data could be a cue for the development of new therapeutic strategies to target the USC.

FUNDING

John's Emmett Foundation, The Netherlands

P3

Short-term effect of Botulinum-A toxin (BTX/A) injections for detrusor overactivity (DO) on suburothelial histological markers

A. APOSTOLIDIS*, T. JACQUES†, A. FREEMAN‡, R. POPAT*, C.J. FOWLER* and P. DASGUPTA§
**The National Hospital for Neurology and Neurosurgery UCLH, †Institute of Neurology, UCL, ‡Royal Free and University College London Medical School, and §The National Hospital for Neurology and Neurosurgery UCLH & Guy's and St. Thomas' Hospitals, London, UK*

INTRODUCTION

We examined, for the first time to our knowledge, possible histological changes in the suburothelium of patients with DO after successful treatment with intra-detrusor BTX/A.

PATIENTS AND METHODS

Pre- and post-BTX/A (4 and 16 weeks) flexible cystoscopic biopsies from 26 patients, 16 neurogenic and 10 idiopathic DO, were stained for haematoxylin-eosin and analyzed blindly for urothelial/suburothelial inflammatory changes, fibrosis, hyperplasia and dysplasia. A previously applied 0–3 grading scale was used to score inflammation and fibrosis.

RESULTS

Urothelium was present in all biopsies, while smooth muscle in 19.7%. There was no evidence of dyplasia, hyperplasia or fibrosis before and after BTX/A. Chronic inflammation was found in 65.4% of baseline biopsies, no difference existing between neurogenic and idiopathic DO in rate (68.7% v 60%) or degree of inflammation (0.75 ± 0.14 v 0.70 ± 0.21). Lamina propria was the site of inflammatory changes in 97.8% of baseline and follow-up biopsies with inflammatory findings and the urothelium in 13.6%. There was no change in inflammation score at 4/52 ($P = 0.81$, $n = 17$). A non-significant increase ($P = 0.17$, $n = 9$) was noted at 16/52, restricted in the neurogenic group.

CONCLUSIONS

BTX/A injections for DO do not result in significant suburothelial histological changes in the short-term, complementing previously reported ultrastructural detrusor findings.

P4

Increased capsaicin receptor TRPV1 in nerve fibres in painful bladder syndrome and its correlation with pain

G. MUKERJI, Y. YIANGOU, S. AGARWAL and P. ANAND
Department of Urology and Neurosciences, Imperial College and Hammersmith Hospital, London

INTRODUCTION AND OBJECTIVES

Painful Bladder Syndrome (PBS) is a chronic, debilitating bladder hypersensitivity disorder. Recent advances in molecular basis of hypersensitivity provide an opportunity to further understanding and treatment of PBS. We studied the presence of capsaicin and heat receptor TRPV1, which is expressed by sensory fibres, in the urinary bladder in PBS, and its relationship to pain symptoms.

MATERIALS AND METHODS

Bladder tissues obtained from 13 PBS and 15 control subjects were immunostained using affinity-purified specific antibodies to TRPV1 and a structural marker (neurofilaments). Nerve fibre and urothelial staining were quantified with computerized image analysis and were correlated with pain score.

RESULTS

There was a marked increase of suburothelial TRPV1-positive nerve fibres in PBS compared to controls ($P = 0.0007$), and the ratio of TRPV1 fibres to neurofilament fibres was also significantly increased ($P = 0.0005$). No significant differences were found in urothelial cell TRPV1-immunoreactivity, or neurofilament-positive fibres, between the two groups. The 'Pain Score' correlated significantly with the relative nerve fibre density of TRPV1 (Spearman 'r' = 0.5024, $P = 0.0015$).

CONCLUSION

This is the first study to have demonstrated increased TRPV1 fibres in PBS, and a correlation between pain scores and TRPV1 levels. Selective TRPV1 antagonists may represent new therapeutic agents for PBS.

P5

Pharmacological responses of the mouse urinary bladder

A.E. CANDA[1], C.R. CHAPPLE[2] and R. CHESS-WILLIAMS[1]
[1]University of Sheffield Department of Biomedical Science, Sheffield, UK; [2]Royal Hallamshire Hospital, Sheffield, UK

INTRODUCTION

The mouse has become an important model for studying the bladder due to the availability of gene knock-out animals. The aim of this study was to determine the pathways involved in contraction and relaxation of the bladder in this species.

MATERIAL AND METHODS

Mouse bladder strips were set up in gassed Krebs-bicarbonate solution and responses to various drugs and electrical field stimulation obtained.

RESULTS

Isoprenaline (β-receptor agonist) caused a 63% inhibition of carbachol precontracted detrusor (EC50 = 2 nM). In contrast, carbachol caused contraction (EC50 = 0.3 μM) and responses were antagonised more potently by 4-DAMP (M3-antagonist) than methoctramine (M2-antagonist). Electrical field stimulation caused contraction, which was inhibited by atropine (60%) and less by guanethidine and α,β-methylene-ATP. The neurogenic responses were not potentiated by inhibition of nitric oxide synthase. The presence of an intact urothelium significantly depressed responses to carbachol and addition of indomethacin and L-NNA to remove prostaglandin and nitric oxide production respectively did not prevent the inhibitory effect of the urothelium.

CONCLUSIONS

As in the human, β-receptor agonists cause relaxation of the mouse bladder while muscarinic agonists cause contraction via the M3-receptor. Acetylcholine is the main neurotransmitter causing contraction while nitric oxide has a minor role. The mouse and human urothelium are similar in releasing a factor that inhibits contraction of the detrusor muscle which is unidentified but is not nitric oxide or a prostaglandin. Therefore, the mouse may be used as a model to study the lower urinary tract.

P6

The differential expression of adenosine receptor mRNA in the stable and overactive human bladder

M. HUSSAIN, N.A. JONES, S. HOLLINGSWORTH and C.H. FRY
The Institute of Urology, University College London, London, UK

OBJECTIVES

Detrusor smooth-muscle expresses adenosine P1-receptors but the relative proportions of P1 subtypes (A1, A2a, A2b, A3) have not been determined. We aimed to determine subtype distribution through mRNA expression, and identify differences in receptor density according to pathology.

METHODS

Detrusor specimens were obtained from 20 patients: stable, $n = 6$; idiopathic overactivity, $n = 7$; neurogenic overactivity, $n = 7$. Total RNA was extracted, reverse transcribed and amplified by the Polymerase Chain Reaction. The products were analysed electrophoretically, followed by scanning densitometry. The ratio of P1-receptor: GAPDH (housekeeping gene) density was used to determine the level of P1-receptor mRNA transcription.

RESULTS

In comparison with GAPDH expression in the same tissues, A2a and A3-receptor mRNA was strongly expressed in all bladder specimens. A1, and to a lesser extent, A2a-receptor expression was variable; with A1 expression being significantly lower than the other three receptors ($P < 0.05$). A2a-receptor expression is down-regulated in neurogenic versus stable bladders. All others were equivalently expressed in the three groups.

CONCLUSIONS

Of the four subtypes, the A1-receptor has the lowest expression which may reflect its localisation on pre-synaptic nerve terminals. The A2a-receptor is under-expressed in neurogenic compared with stable bladders. We conclude that P1-receptor subtype expression is heterogeneous in bladders of differing pathologies.

P7

The contractile properties of human paediatric detrusor smooth muscle in patients with posterior urethral valves

N.S. JOHAL, P.M. CUCKOW and C.H. FRY
Institute of Urology & Nephrology, London, UK and Great Ormond St Hospital, London, UK

INTRODUCTION

Patients with posterior urethral valves (PUV) often require reconstructive surgery due to bladder dysfunction. The contractile properties of detrusor muscle in this population are unknown. This study aimed to examine the *in-vitro* contractile properties of human detrusor in PUV and normal patients.

METHODS

Detrusor strips from patients with either PUV or normal bladders were superfused with a buffered physiological solution. Isometric electrically-stimulated (1–60 Hz), nerve-mediated responses, and agonist-induced contractions using carbachol (0.1–30 μM) or alpha-beta-methylene-ATP (ABMA, 1 μM) were recorded. Data are medians (25,75% interquartiles), significance tests ($P < 0.05$) used non-parametric Student's *t*-tests.

RESULTS

The contractile responses to nerve-mediated and agonist-mediated stimulation were significantly less in the PUV group. Nerve-mediated Tmax values, estimated from force-frequency curves were: 6.4 (3.2, 11.8) vs 1.8 (0.73, 3.2). Carbachol Tmax [from dose–response curves were: 20.3 (8.2, 36.8) vs 4.9 (2.4, 6.5); and ABMA responses were: 9.4 (4.4, 13.3) vs 0.75 (0.18, 1.6)]. The median carbachol EC50 was greater in the PUV group [3.1 (2.7, 3.9) vs 4.3 (3.8, 5.0)]. Atropine-resistant nerve-mediated responses were recoded in all strips, but were proportionately less in the PUV group [70 (37, 77)% vs 16 (7, 3 1)%].

CONCLUSIONS

Detrusor from boys with PUV exhibited reduced contractility, whether elicited by excitatory nerves or agonist application. Sensitivity to muscarinic agonists was also reduced suggesting altered muscle–matrix interaction content and/or dysfunctional excitation–contraction coupling.

P8

Dynamic changes in regional brain activity with increasing levels of desire to void: a fMRI study

R.B.C. KAVIA, P.M. EVANS, R. DASGUPTA, R. DOLAN, C.J. FOWLER and H. CRITCHLEY
Institute of Neurology, London, UK and National Hospital of Neurology and Neurosurgery, Institute of Cognitive Research/Functional Imaging Laboratory, London, UK

INTRODUCTION

Functional brain imaging using positron emission tomography (PET) suggests that states of bladder fullness and desire-to-void are associated with enhanced neural activity in cerebral cortex (anterior cingulate and prefrontal cortices) and brainstem (periaqueductal grey and pons). In contrast to PET, functional magnetic resonance imaging (fMRI) enables a dynamic assessment of changes in brain activity. We used fMRI to identify changes in brain activity that correlate with bladder filling and increasing desire-to-void.

METHODS

Nine healthy women (21–34 years) were scanned in two sessions (1.5T Siemens-Sonata Scanner) using standard fMRI methodology. Subjects rated their desire-to-void on a 5-point validated scale. Group data were analyzed with SPM2.

RESULTS

Activity within dorsal prefrontal and anterior cingulate cortices and cerebellum was positively correlated with subjective desire-to-void during bladder filling, whereas activity within inferior prefrontal cortex, insula and pons was negatively correlated.

CONCLUSIONS

Dynamic increases in desire-to-void recruits higher-order brain regions, such as dorsolateral prefrontal and cingulate cortices that are implicated in cognitive control of action and, in the case of anterior cingulate, in integrated visceral and motivational responses. Attenuation of activity within insula and pons may reflect a top-down inhibition of a cortical bladder representation and brainstem micturition reflexes for the maintenance of continence.

FUNDING

Wellcome Trust Grant

P9

Haemodynamic changes and the micturition cycle

E.J. BARROW, T. WILLARD, M.O. COLUMB and N.J.R. GEORGE
South Manchester University Hospitals NHS Trust, Manchester, UK

INTRODUCTION

Autonomic control of bladder function remains poorly understood. Previously identified fluctuations in mean blood pressure (MBP) with bladder filling were confounded by pain. This study examined haemodynamic changes with moderate bladder filling.

METHODS

Healthy volunteers ($n = 12$) drank 1.5 L of water. Transthoracic bioimpedance measures of cardiac index (CI), stroke volume (SV) and systemic vascular resistance index (SVRI) were recorded with heart rate, ECG, MBP, and pulse pressure (PP) at; start, first desire to micturate (FDM), pre-void and post-void.

RESULTS

Measure (units)	Start	FDM	Pre-void	Post-void	*P*-value	Within *r*
Bladder volume (mL)	0 (0)	429* (159)	586** (154)		<0.0001	
CI ($L\ min^{-1}\ m^{-2}$)	3.48 (1.10)	3.10* (1.25)	3.03* (1.48)	2.76* (0.83)	0.022	–0.51
SV (mL)	87.6 (20.9)	76.0* (18.5)	74.9*** (16.6)	73.2* (21.4)	0.0023	–0.71
SVRI ($dyne.s.cm^{-5}\ m^2$)	2182 (428)	2570 (742)	2717* (804)	2808** (801)	<0.0001	0.54
PP (mmHg)	60.1 (13.1)	54.3 (5.5)	47.5** (6.9)	52.2 (7.6)	0.0096	–0.46
MBP (mmHg)	90.1 (10.8)	90.5 (11.9)	90.8 (10.8)	90.8 (12.4)	>0.20	–0.0006

*Data are mean (*SD*). Multiple adjusted* P *versus start: *<0.05, **<0.01, ***<0.001.*

CONCLUSIONS

Absence of MBP changes during filling indicates previous studies involved excessive bladder filling and pain. The significant haemodynamic changes seen suggest autonomic activity in response to bladder filling.

P10

The effect of temperature on cavernosal smooth muscle contractile function

P. KUMAR, C.H. FRY, C.Y. LI, D.J. RALPH and S. MINHAS
Institute of Urology, University College London, London, UK

INTRODUCTION

Initial treatment of ischaemic priapism involves corporal washout to evacuate clots and promote detumescence, usually with room temperature fluids. The effect of lowering local temperature on corporal contractility is unknown and this study aimed to characterise this condition.

METHODS

Guinea-pig corpus cavernosum strips were superfused with a HCO_3-/CO_2 buffered solution at 37°C (pHe 7.39), room (21°C, pHe 7.20), or fridge temperature (4°C, pHe 7.00). Isometric nerve-mediated contractions were elicited by electrical field stimulation; agonist-induced contractions by exposure to 15 μM phenylephrine. Responses were compared to those generated at 37°C, with pHe 6.99 solution. Data are mean ± SD; significance tests ($P < 0.05$) used Student's *t*-test.

RESULTS

Nerve-mediated contractions were significantly reduced after 30 min at 21°C and 4°C (46 ± 9%; 37 ± 6%, respectively). Contractions recovered completely on return to 37°C after 60 min. Reduction to 21°C or 4°C, or return to 37°C, had no significant effect on the magnitude of agonist-induced contractures. Acidosis had no significant effect on nerve-mediated or agonist-induced responses after 60 min, or on return to control solution.

CONCLUSION

Washout with fluids of either room or fridge temperature suppresses nerve-mediated contractions, and hence may hinder penile detumescence, the action is not due to associated acidosis. Washout with body temperature fluids will optimise penile detumescence.

Tuesday 28 June 11.00–12.00 Management of Urinary Stones Chairmen: T. Philp and G. Watson

P11

Lithotripsy teleclinic service can significantly shorten patient journey times

S.V. CHITALE, N.A. BURGESS and S.O. IRVING
Norfolk & Norwich University Hospital NHS Trust, Norwich, UK

INTRODUCTION

Traditionally, lithotripsy (ESWL) patients have been followed up as outpatients with a post treatment X-ray. This approach prolongs the 'total journey time' to treatment completion. We introduced a 'Stone teleclinic' to reduce it. Every week, 2 consultants reviewed the X-rays and a decided to continue/discontinue lithotripsy. A specialist nurse telephoned patients, informed of their X-ray result and booked/terminated further treatment.

MATERIALS AND METHODS

Clinic notes of 66 ESWL patients were reviewed. We compared 'time to first treatment' (*t*) and 'total journey time' (T) (point at which ESWL was terminated) between 'traditional' and 'teleclinic' groups.

RESULTS

30 patients were managed with traditional approach: 4 excluded as they defaulted, 12 had one lithotripsy, 5 needed two, 7 required 3 and two needed four. Mean '*t*' was 46.8 days. Mean 'T' was 162.5 days. 19/26 (73%) had successful treatment. 36 patients had lithotripsy post-teleclinic introduction: 1 defaulted, 9 required one session, 12 had two, 11 had three and four had four treatments. Mean '*t*' was 23.4 days and mean 'T' was 86.3 days. 25/35 (71.4%) had successful lithotripsy.

CONCLUSION

Introduction of a teleclinic for lithotripsy helped reduce patient's 'total journey time' and streamline the process by removing delays due to limited outpatient clinic availability and resources.

P12

Extracorporeal shock wave lithotripsy (ESWL) in the treatment of renal pelvicalyceal stones in morbidly obese patients

V.A. MEZENTSEV
Department of Urology, Moscow Regional Scientific Research Clinical Institute, Moscow, Russia

INTRODUCTION

In morbidly obese patients difficulty may be encountered in positioning patients for ESWL.

OBJECTIVES

To evaluate the outcomes and cost-efficiency of ESWL in treatment of pelvicocalyceal stones in morbidly obese patients.

MATERIAL AND METHODS

Using various aids 37 patients with body mass index more than 40 kg/m^2 were treated using Siemens Lithostar-plus. The size of pelvicalyceal stones was between 6 and 20 mm.

RESULTS

Overall stone free rate at 3 months of 73% was achieved. The mean number of treatments was 2.1. Post-lithotripsy secondary procedures rate was 5.4%. The most effective (87% success rate) and cost-efficient treatment was in patients with pelvic stones. Treatment cost of the patients with low calyceal stones was in 1.8 times higher than in the patients with pelvic stones with success rate of 60%.

CONCLUSION

We conclude that ESWL with Siemens Lithostar-plus is the most effective and cost-efficient in morbidly obese patients with pelvic stones sized between 6 and 2 0 mm. The increased distance from the skin surface to the stone in those patients do not decrease the success rate. ESWL should not be considered as the first line of treatment in morbidly obese patients with low caliceal stones.

P13

Preliminary results from a prospective randomised trial to determine the efficacy of extracorporeal shockwave lithotripsy: does rate matter?

K. DAVENPORT, J. PARKIN, F.X. KEELEY and A.G. TIMONEY
Bristol Urological Institute, Southmead Hospital, Bristol, UK

INTRODUCTION

The aim of this study was to prospectively compare two rates of shockwave delivery, 60 and 120 shockwaves per minute, to determine whether rate affects outcome when using the Dornier Lithotripter S for renal calculi.

PATIENTS AND METHODS

A total of 100 patients with uncomplicated renal calculi have been recruited and randomised. Following a single treatment the patients are reviewed at 3-months to determine the outcome. To date, 70 of these patients have complete follow up. The remaining 30 have had their treatment and are awaiting their 3-month review.

RESULTS

Of the 70 patients with complete follow up, 36 were treated at rate 60 and 34 at 120. The results obtained from these patients are as shown. We aim to have complete data to present.

	Rate 60 SW/min	Rate 120 SW/min
Mean calculus area (mm2)	71	56
Outcome		
Calculus free (%)	53	38
Fragments < 4 mm (%)	3	17
Fragments > 4 mm (%)	25	26
No response (%)	19	18

DISCUSSION

While stone free rates were higher with rate 60, the overall efficacy, as measured by fragments greater than 4 mm and those showing no response, were equal for the two groups suggesting that rate has no effect on efficacy of treatment.

P14

A prospective comparison of flexible ureterorenoscopy and holmium laser versus electrohydraulic lithotripsy for ESWL resistant upper tract calculi

L.A. AJAYI, J.R. HENDERSON, K. THOMAS, P. DASGUPTA, J.M. GLASS and R.C. TIPTAFT
Department of Urology, Guys Hospital, Guys & St Thomas' NHS Trust, London, UK

OBJECTIVE

To compare upper tract stone clearance using our prospective databases of flexible ureterorenoscopy (FURS) with electrohydraulic lithotripsy (EHL) (Dasgupta et al. Ann RCSE. 2004) to FURS with holmium laser.

METHOD

Comparison of 101 FURS using EHL and 101 FURS using holmium laser to treat ESWL resistant calculi. Success was defined as complete clearance or stone fragmentation to 2 mm or less.

RESULTS

Analysis revealed shorter median operative time, 32 min (range 5–95 min) compared to 55 min (range 15–210 min), shorter median screening time 0.94 min (range 0.02–3.9 min) compared to 2.2 min (range 0.3–9.1 min) for Holmium laser against EHL. Successful outcomes were for stones < 10 mm (holmium 80%, EHL 72%), stones 11–20 mm (holmium 59%, EHL 80%), and stones > 20 mm (holmium 0%, EHL 50%). Major complication rate was 2.6% for EHL and 0.05% for holmium laser.

CONCLUSION

Holmium laser is more effective than EHL at fragmenting stones of 10 mm or less, with a lower complication rate. For larger stones EHL may be considered but for those > 20 mm PCNL is still a better option.

P15

Do antioxidants protect against renal injury in patients receiving lithotripsy for renal calculi?

E.O. KEHINDE, K.A. AL-AWADI, H. ABDUL HALIM, O.A. MOJIMINIYI, A. AL-HUNAYAN and M.P. ABRAHAM
Departments of Surgery (Division of Urology) and Pathology, Faculty of Medicine, Kuwait University, Kuwait

INTRODUCTION

To determine if ESWL given to patients with renal calculi produces free radicals due to ischemia and reperfusion injury, and if the administration of antioxidants before ESWL can reduce the degree of renal injury.

PATIENTS AND METHODS

Before ESWL, 63 patients with 1–3 cm renal calculi had 'J' stents inserted. Patients were divided into 2 treatment groups: Group A (Control Group) ($n = 29$) No antioxidants given, Group B ($n = 34$) Given 2 capsules of 'Nature Made R' (antioxidants) 2 hours before ESWL, then 2 and 8 hours after ESWL. Blood and urine samples were obtained from all patients, just before start of ESWL, at 2 hours, 24 hours, 7 days and 28 days after ESWL. Serum levels of malondialdehyde (MDA), alpha tocopherol, ascorbic acid, and lactate dehydrogenase (LDH) were measured.

RESULTS

At 24 hours, patients in Group B had significantly reduced serum MDA ($P < 0.001$), higher ascorbic acid ($P < 0.001$), higher alpha tocopherol ($P < 0.01$) and lower LDH ($P < 0.01$) levels compared to patients in group A.

CONCLUSION

These findings indicate that ESWL generates free radicals through ischemic/reperfusion injury mechanism and the use of antioxidants before ESWL may be associated with significant reduction in the severity of renal injury.

FUNDING

Kuwait Foundation for Advancement of Sciences. Grant No: KFAS 2000/07/05.

P16

Complications after percutaneous nephrostomy – a single centre audit

B.K. SOMANI, G. NABI, P. THORPE, J. HUSSEY and S. McCLINTON
Aberdeen Royal Infirmary, Aberdeen, UK

INTRODUCTION

In a recent pilot audit, the Royal College of Radiologists (RCR) in UK has used a threshold of 8% for all major complications following pecutaneous nephrostomy. Similarly, standards of practice document by the Society of Cardiovascular and Interventional Radiologists (SCVIR) has reported a complication rate of 1–4% for haemorrhagic/vascular injuries and 1–9% for septic shock (Ramchandani et al. J Vasc Interv Radiol. 2001; 12: 1247–51). In the present study, we have audited the performance of our percutaneous nephrostomy service using a standardised protocol for the past 6 years and compared it with the recommended thresholds as mentioned above.

MATERIAL AND METHODS

Between January 1999–December 2004, all patients who underwent percutaneous nephrostomies were identified from a departmental database. The clinical records of patients who sustained complications were retrieved to find out the predisposing factors and final outcome.

RESULTS

Eighteen of 502 (3.5%) patients sustained complications. Major vascular injuries or haemorrhage were seen in 1% of patients (renal parenchymal hematoma-2 and arterial injuries-3). One patient developed septicemia and had uneventful recovery following conservative treatment. In two cases (0.2%), renal pelvic injuries with extravasation were managed by placement of stents. There was technical failure in 2% (10/502) of patients due to either lack of dilatation of pelvicalyceal system or body habitus.

CONCLUSIONS

Percutaneous nephrostomy is a safe procedure with acceptable complication rates. A careful attention to the agreed protocols/algorithms, pre-procedure antibiotics regimens, patient optimisation and a dedicated uro-radiology unit are essential to achieve optimal results.

P17

Vascular complications following percutaneous nephrolithotomy: are there any predictive factors?

A. SRIVASTAVA, K.J. SINGH, D. DUBEY, A. MANDHANI, R. KAPOOR and A. KUMAR
SGPGIMS Lucknow, India

OBJECTIVES

To evaluate the severe haemorrhagic complications of percutaneous nephrolithotomy (PNL), management and to analyze predictive factors.

METHODS

Retrospectively analyzed data of 1854 patients who underwent PNL at our institute between 1993–2003. All patients were resuscitated with intravenous fluids and blood transfusions. In patients in whom bleeding did not respond to conservative means were subjected to angiography and subsequent embolisation. Multivariate analyses were done to determine the various factors responsible for occurrence of these lesions.

RESULTS

27 patients with mean age of patients was 38.6 years who required angiography + embolisation for control of bleeding. Mean time of onset of haemorrhage was 8 days. Renal arteriography revealed pseudoaneurysm in 13, arteriovenous fistula in 6, combination of both in 4, lumbar artery injury in 1 while no lesion was found in 3 patients. In 22 patients successful embolisation of the offending vessel could be achieved while in 2 patients there was recurrence of haematuria. On multivariate analysis only stone size was the only significant factor predicting occurrence of these vascular complications.

CONCLUSION

Severe haematuria is a rare complication of PNL which can be successfully managed with angioembolisation. Stone size significantly predicted the occurrence of the lesions.

P18

Uretero-renoscopic retrograde intrarenal surgery (RIRS) for caliceal diverticula calculi: a multicentre experience

B. KHOUBEHI, R.D. SMITH and G. FUCKS
St. Mary's Hospital, Praed St, London, UK and Cedars Sinai Medical Center, Urology, Los Angeles, CA, USA

INTRODUCTION

Symptomatic caliceal diverticula calculi have been treated by a variety of means, with varying success rates. We report our experience of treating such diverticula by RIRS.

PATIENTS AND METHODS

109 caliceal diverticula bearing stones in 101 patients (42 male and 59 female) with average age of 47 have been treated in 3 centres. Location of diverticula were upper pole, mid-pole and lower pole in 58, 41 and 10, respectively.

RESULTS

The caliceal infundibulum was identified by instilling diluted methylene blue into the collecting system through the instrument work channel, before being incised or dilated successfully for access in 96%. Failures were only in the lower pole (4/11). When a stone burden greater than 1 cm was present (20%), co-fragmentation with simultaneous shock-wave lithotripsy (SWL) produced a 75% stone free rate. Stone free rate was 90% for smaller stones.

CONCLUSION

In our experience, the outcome of RIRS approach for caliceal diverticula compares favourably with that of percutaneous nephrolithotomy (PCNL), but with less morbidity. Co-fragmentation with simultaneous SWL allows expeditious treatment of larger stone burdens. Special indications include transplant kidneys and those with coagulopathy. We recommend this approach to diverticula in the upper and mid-pole regardless of anterior or posterior orientation.

P19

How to avoid the forgotten ureteric stent and potential litigation

M.F. LYNCH, K. GHANI, C. ROWBOTHAM, N. SHAH and K. ANSON
St George's Hospital, London, UK

INTRODUCTION

The ureteric stent is an integral part of urological management but is a major patient safety issue and source of potential litigation. Ureteric stents are generally well tolerated but can lead, if forgotten, to significant morbidity from late complications. The surgeon is responsible to track stented patients ensuring subsequent recall.

MATERIALS AND METHODS

We have developed a web based Stent Extraction Reminder Facility (SERF), that employs an Electronic Stent Register (ESR), to alert the urologist when a patient's stent is due for removal. At stent insertion the surgeon creates a Stent Episode within the ESR and enters a Maximum Stent Life (MSL). The SERF automatically interrogates the ESR and generates escalating emails to alert the urologist if key events are missed.

RESULTS

Since introduction 150 patients have been registered. 203 stent episodes have been created and 159 closed. Of 44 open episodes, 7 are overdue and booked for stent removal.

CONCLUSION

The stent registry is designed to avoid the complications of the forgotten ureteric stent. This system registers stent insertion but also ensures that automatic recall is facilitated prior to exceeding the safe maximum stent life for that patient.

P20

Impact of a metabolic stone clinic on management of patients with cystinuria

W.R. CROSS, R. CHAHAL, E. WILL and J. CARTLEDGE
Departments of Urology and Nephrology, St James's University Hospital, Leeds, Yorkshire, UK

INTRODUCTION

A previously presented retrospective review of patients with cystinuria managed in our regional stone unit during a 10-year period, demonstrated a high intervention rate and poor compliance with pharmacological intervention [BJUI. 2002; 90 (1): 61]. Following this study, a dedicated cystinuria clinic was established. We report the impact of this combined Nephrology-Urology service on the management of patients with cystinuria.

RESULTS

This study included 36 patients who were followed up for a mean of 22 months in the cystinuria clinic. In all, 34 procedures were carried out, comprising 4 ESWL, 4 percutaneous nephrolithotomy and 26 ureteroscopy ± laser lithotripsy. Of the study group 32 patients (89%) had received pharmacological intervention, none of which had experienced any significant side effects. At the end of the study period 26 patients (72%) were stone free; 8 had small asymptomatic stones that were unchanged for the study period and 2 awaited day-case flexible ureteroscopy.

CONCLUSIONS

The establishment of a cystinuria clinic has enabled a focused approach to the management of a high-demand group of patients. It has halved the number of clinic attendances per patient, permitted earlier and less invasive intervention, decreased the intervention rate by a factor of three and increased the stone free status.

Tuesday 28 June 11.00–12.00
Genital Reconstruction
Chairmen: S. Payne and R. Pickard

P21

Implantation of artificial urinary sphincters in the UK, an analysis of 677 procedures over a five year period

A. BAZO MORALES, J.C. GODDARD, S. JAIN and T.R. TERRY
University Hospitals of Leicester NHS Trust, Leicester, UK

INTRODUCTION

The artificial urinary sphincter (AUS) is most commonly indicated in post-radical prostatectomy incontinence, but also used in neurological disease or sphincter damage. Currently in the UK only one type of AUS is available (AMS 800). This study describes experience with this device.

METHODS

The manufacturers database was consulted. All surgeons complete a pro-forma giving patient and procedure details.

RESULTS

Data was available from 1999 to 2003. A total of 677 implant procedures were performed; 391 primary (24 in children) and 286 revisions. 67 surgeons performed implant surgery. Most ($n = 59$) were carrying out both primary and revision surgery. Only 6 (9%) surgeons had carried out more than 10 procedures and only 19 (28%) more than 5. Reasons for revision in 186 cases included mechanical problems (65), erosion (31), infection (31) and recurrent incontinence (59) the latter three could be reduced by surgical experience.

DISCUSSION

A large number of AUS procedures are carried out in the UK, the workload is spread over many surgeons with only a few doing a large number. The high number of revisions may indicate problems of old AUS designs, the revision rate has fallen with the more modern devices. Increased individual surgical experience may improve this further.

P22

Primary anterior urethral cancer in male: is penile – sparing surgery a viable therapeutic option?

S. AHMED, P. HADWAY and N. WATKIN
St. George's Hospital, London, UK

INTRODUCTION

Primary anterior urethral cancer is a rare condition. Only a small number of cases have been reported and the management has not been subjected to thorough examination previously.

PATIENTS AND METHODS

10 consecutive cases of anterior urethral cancer with a mean follow-up of 20.6 months were reviewed retrospectively. Symptoms included: Obstructive symptoms, meatal red patch and blood stained discharge. At presentation, 7 patients had palpable distal penile mass, and the inguinal lymph nodes were enlarged in 4 patients. One patient had metastatic disease at presentation.

RESULTS

Penile preserving surgery was offered to all patients. This included: Glansectomy and distal urethrectomy (3 patients); Glansectomy, distal corporectomy and distal urethrectomy (3 patients); Urethrectomy and urethroplasty (3 patients) and 1 patient underwent subtotal urethrectomy and perineal urethrostomy. 6 patients had malignant nodal disease treated by radical surgery. There were no local recurrences. 2 patients have died, one from an unrelated condition and the other during the treatment of metastatic disease. Adjuvant radiotherapy and chemotherapy were given selectively.

CONCLUSION

The management of anterior urethral cancer is still not fully defined but penile preservation is feasible combined with regional nodal surgery and adjuvant chemo/radiotherapy as necessary.

P23

Total phallic reconstruction in management of penile cancer: experience in 10 patients from a single centre

V. AGRAWAL, P. KUMAR, N. CHRISTOPHER, S. MINHAS and D. RALPH
St.Peter's Department of Andrology, Institute of Urology, London, UK

INTRODUCTION

Total phallic reconstruction may be considered in patients with penile cancer who suffer penile loss as a result of surgical penile amputation.

PATIENTS AND METHODS

A retrospective case-notes review was undertaken of 10 penile cancer patients over a 9-year period (8 Radial arm phalloplasties, 2 pubic phalloplasties).

RESULTS

Mean age was 48 years (41–67) with a mean follow-up of 3 years (4 months–7.2 years). All 10 patients are able to void in a standing position and are happy with the cosmesis. 3 of 10 patients have expressed dissatisfaction as a result of post-operative complications. 5 patients suffered post-operative complications with 4 requiring revision surgery. Post-operative complications included neo-urethral strictures (2), penile wound infection (1), forearm donor-site wound infection (1), forearm donor site wound breakdown (1), neo-uretheral fistula (2), and meatal stenosis in 1 patient. Revision surgical procedures included 3 uretheroplasties (1 patient requiring 2 successive procedures), revision phalloplasty (1), meatal dilatation (1), and revision of scar of phalloplasty in 1 patient.

CONCLUSION

Although involving multi-staged, lengthy procedures with attendant high rate of post-operative complications requiring revision surgery in a majority of patients, total phallic reconstruction achieves a functional penis.

P24

The classification and management of penoscrotal lymphoedema

P. HADWAY, C.M. CORBISHLEY, P.S. MORTIMER, C. HARLAND, S. KOMMU and N.A. WATKIN
St George's Hospital, London, UK

INTRODUCTION

Penoscrotal lymphoedema is an uncommon disorder, which is poorly understood and can be severely debilitating. Congenital lymphoedema is often associated with a number of rare syndromes and can be classified by age of presentation. Acquired disorders can be idiopathic, iatrogenic, infective, neoplastic or granulomatous in origin. Pathologically the lymphatics of the affected tissues are most commonly underdeveloped or obstructed.

PATIENTS

20 patients with penoscrotal lymphoedema were referred to a specialist team over a 4-year period. We report prospectively on their aetiology, management and outcome.

RESULTS

Of the 20 patients, 2 were congenital, 4 idiopathic, 3 secondary to inflammatory bowel disease and 11 iatrogenic, following radiotherapy or surgery for malignancy. Management options include physical therapy, medication and surgery. Laser ablation of lymph blisters, circumcision, local excision of nodules and reductive surgery with skin graft reconstruction are used as appropriate. 12 patients were managed conservatively, 4 underwent circumcision and laser ablation, 2 required excision of nodules and 2 underwent reductive surgery with reconstruction. Excellent cosmetic and functional results were obtained with no complications experienced.

CONCLUSIONS

Multidisciplinary management with dermatologists, physiotherapists and urologists is the key to success. Surgery in carefully selected patients can offer excellent cosmetic and functional results.

P25

The outcome of revision urethroplasty

D.E. ANDRICH, N. DAKUM, T.J. GREENWELL and A.R. MUNDY
Institute of Urology, UCLH, London, UK

PURPOSE

To assess the restricture rate following revision urethroplasty and correlate this with stricture characteristics, number of previous urethroplasties and characteristics of the revision urethroplasty.

PATIENTS AND METHODS

Stricture recurrence was assessed for all 89 patients having revision urethroplasty between 1st September 1997 and 31st August 2003. Stricture aetiology, location and length, along with the number and type of previous urethroplasty were also recorded. Revision urethroplasty was single stage in 41 patients (46%) and staged in 48 (54%). Mean follow-up available was 4 years (range 2–11 years).

RESULTS

Restricture following revision urethroplasty occurred in 14 patients (16.9%). The restricture rate increased proportionately with number of previous urethroplasties, occurring in 13.5, 12.5, 20, 28.6 and 40% of patients who had had one, two, three, four or five or more previous urethroplasties. Restricture was most likely to occur in post-infective (28.5%) and post-hypospadias strictures (20%). Restricture was also more likely for long (>4 cm) (19.6%) and for bulboprostatic strictures (22.2%).

CONCLUSIONS

An adverse outcome following revision urethroplasty is significantly correlated with the number of previous failed urethroplasties. Post-infective, long and bulboprostatic strictures are also associated with worse outcomes. Despite this, revision urethroplasty is associated with satisfactory (83.1% stricture free) long-term outcome.

P26

Buccal mucosal urethroplasty: a versatile technique for all urethral segments

A. SRIVASTAVA, A. SURI, D. DUBEY, A. MANDHANI, R. KAPOOR and A. KUMAR
SGPGIMS Lucknow, India

This abstract has been withdrawn by the authors.

P27

The fate of 'Left over Bladder' after supra-vesical diversion

T. FAZILI, T. BHAT, C. KOURIEFS, S. MASOOD, J. H. PALMER and G. R. MUFTI
Medway Maritime Hospital, Gillingham, Kent, UK

OBJECTIVE

To study the fate of the 'left over urinary bladder', in patients who underwent supra-vesical urinary diversion without cystectomy for benign pathology.

MATERIAL AND METHODS

This retrospective study was undertaken on 24 patients (9 males and 15 females) with a median age of 59 years, in whom supra-vesical urinary diversion was performed for various benign conditions from 1996–2004. These included incontinence, acontractile bladder, radiation and/or hemorrhagic cystitis, and neuropathic bladder. The follow-up ranged from 12 to 96 months, with a median of 48 months.

RESULTS

Thirteen (54%) patients experienced problems with the retained bladder. Two (8%) presented with urethral bleeding, which was treated with bladder washouts. Eleven (46%) patients developed infective complications, 3 (7%) settled with expectant treatment, however, 8 (39%) developed frank pyocystis. Three (7%) were treated with Spence procedure (vesico-vaginostomy), however, this alleviated the problem in only one patient. Six (25%) required cystectomy.

CONCLUSIONS

Patients undergoing supra-vesical diversion without cystectomy for benign disease should be warned that the incidence of subsequent bladder problems is more than 50% and that one in four patients will subsequently need removal of the left over bladder.

P28

Erectile dysfunction following urethroplasty

D.E. ANDRICH, M. SWINN, T.J. GREENWELL and A.R. MUNDY
Institute of Urology, UCLH, London, UK

PURPOSE

To assess the incidence of erectile dysfunction (ED) at 3 and 12 months following urethroplasty and the effect of treatment.

PATIENTS AND METHODS

The incidence of ED, need for and response to treatment were assessed at 3 and 12 months following urethroplasty in 264 patients. Median follow-up was 35.8 months (range 18–29).

RESULTS

Fifty-five patients had pre-operative ED of whom 8 (15%) recovered normal erectile function by 12 months. Two hundred and nine patients (79%) had no ED pre-operatively of whom 21 (10%) reported ED at 3 months and 11 (5%) reported ED at 12 months. Of those reporting ED at 3 months; 10 (48%) recovered normal erectile function, 5 (24%) had complete response to oral therapy and 3 (14%) had persistent not bothersome ED for which they requested no treatment. Three (14%) men failed to attend for further review and were not contactable. The lowest rate of ED 0% (0–2.8%) followed bulbo-bulbar anastomotic urethroplasty and the highest 5% (5–7.5%) followed bulbo-prostatic anastomotic urethroplasty.

CONCLUSIONS

Persistent ED occurs following 1.8–2.5% of urethroplasties in 3.8–5.2% of patients and persistent symptomatic untreated ED occurs following 0–0.7% of urethroplasties in 0–1.14% of patients, depending on whether patients lost to follow-up are included.

P29

Technique of tubularisation of the rectourethralis/posterior rhabdosphincter coupled with formation of a posterior vesico–urethral rectal sling to achieve early continence following radical retropubic prostatectomy (RRP)

B. KHOUBEHI, R.D. SMITH and A. PATEL
St. Mary's Hospital, London, UK

INTRODUCTION

Following RRP, urinary incontinence is a significant source of morbidity. We have prospectively assessed effect of intra-operative technical modifications on early continence rates in RRP.

METHODS

Modifications were made to the technique of RRP to increase posterior urethral support. Partly of this posterior support is provided by tubularising rectourethralis and the posterior rhabdosphincter. Furthermore, extra support is provided to the urethro-vesical anastomosis by creating a rectal sling with interrupted sutures from the anterior mesorectum to the cut edge of the endopelvic fascia. We compared early continence using validated questionnaires and independent telephone survey in a

cohort of men where posterior urethral support had not been provided with a cohort of men who this surgical modification.

RESULTS

At 3 months, 45% of men reported full continence (no pad usage) in the first cohort of men ($n = 20$). In the cohort with posterior urethral support, 95% (39/41) achieved full continence at 3 months and 71% (29/41) were free of pads either immediately or by the end of first week after catheter removal.

CONCLUSION

Incorporation of posterior urethral support in two forms (tubularisation of rectourethralis and formation of a posterior urethral sling) during RRP, has significantly improved early continence and pad free rates.

P30

The role of mucus and protein biomarkers in intestinal segments transposed into the urinary tract

G. NABI, G.L. HOLD, P. CASH, I.R. BOOTH and J. N'DOW
School of Medicine, University of Aberdeen, Aberdeen, UK

INTRODUCTION

Transposed intestinal segments undergo obvious chronic inflammatory changes and alteration in mucin gene expression. Some of these changes are believed to be due in part to chronic urinary tract infections but the source of persistence leading to recurrent symptomatic infections is not known. We report here the identification of novel urinary protein markers and explore the role mucus as a source of persistence of bacteriuria using ultrastructural and molecular techniques.

MATERIAL AND METHODS

Ten patients with transposed intestinal segments (enterocystoplasty, $n = 6$; ileal neobladder, $n = 4$) and 5 healthy controls were recruited. Urinary proteins were isolated using 2-D PAGE technology and peptide mass mapping followed by quantification by ELISA. Biopsy samples and mucus plugs from all transposed segment patients were subjected to electron microscopy. DNA was extracted from cultured isolates (mucus plug & urine), amplified using universal bacterial primers and analysed by Restriction fragment length polymorphism (RFLP). Bacteria were then identified both in urine and mucus plug samples using direct 16S rDNA sequencing.

RESULTS

There were consistent differences observed in a series of low molecular weight proteins between patients and controls and quantification of one of these markers by ELISA confirmed significant concentrations of pancreatitis associated protein 1 (PAP 1; an acute stress protein) in all patients but undetectable in controls. Scanning electron microscopy confirmed a huge number of bacteria embedded in urinary mucus plugs forming micro-colonies but none in biopsy samples. RFLP analyses and DNA sequencing confirmed the same species of bacteria was present in mucus plugs and urine from the same patient

CONCLUSIONS

We report for the first time novel protein biomarkers in the urine of transposed segment patients by proteomic analysis with quantification by ELISA of one of these proteins (PAP 1). Preliminary observations also suggest that mucus is the important source of bacterial persistence in these patients.

Tuesday 28 June 14.30–15.30
Andrology and Infertility
Chairmen: I. Pearce and J. Ramsay

P31

Quality of life assessment of chronic pain after vasectomy surgery

K.P. LIM, R.M. GRAHAM and S. McCLINTON
Aberdeen Royal Infirmary, Grampian University Hospitals Trust, Aberdeen, UK

INTRODUCTION

Chronic post-vasectomy pain is a well recognised complication of vasectomy surgery, with reported incidence ranging from 2% to 33% in published studies. Our aim was to determine frequency and identify risk factors for post-vasectomy pain at our institution. We also wanted to assess impact on quality of life (QoL)

PATIENTS (OR MATERIALS) AND METHODS

A prospective questionnaire based study was conducted in patients presenting for vasectomy at our intuition from 2002–2003. Questionnaires were delivered 6 weeks and 6 months post-operation. Quality of life (QoL) assessment was performed using the SF36 form. Data was collated and analysed using SPSS.

RESULT

Pilot data of 50 patients has identified that the majority of patients had some pain at 6 weeks following procedure which eventually resolved by 6 months. Chronic post-vasectomy pain was found in 4% of patients. Impact on QoL for this small group of patients was still significant at 6 months.

CONCLUSION

Incidence of chronic post-vasectomy pain was low, but the impact on QoL significant. Better education of patients & surgeons should be undertaken to emphasize this risk factor to vasectomy surgery.

FUNDING

TENOVUS Scotland

P32

The functional and structural consequences of cavernous nerve injury in the rat model are ameliorated by sildenafil citrate

J.F. DONOHUE, M. MULLERAD, D.A. PADUCH, P.S. LI, P.T. SCARDINO and J.P. MULHALL
Memorial Sloan-Kettering Cancer Center, New York, NY, USA

INTRODUCTION

Recent data suggests that the use of daily sildenafil may aid in the preservation of erectile function following radical prostatectomy. This study was undertaken to define the impact of daily sildenafil administration on erectile function in the rat model of cavernous nerve (CN) injury.

METHODS

60 rats underwent bilateral CN haemostat crush injury. Immediately prior to CN crush, animals received 10, 20 or 40 mg/kg of sildenafil subcutaneously or no treatment (control). Drug was given daily for 3, 10 or 28 days. At these time points, a second surgery was performed, at which time intracavernosal pressure (ICP) was recorded following electrical stimulation of the CN. Maximum ICP: mean arterial pressure (MAP) ratio was calculated.

RESULTS

Daily sildenafil administration improved ICP/MAP ratios compared to the control group in a time and dose-dependent manner. Peak ICP/MAP preservation was observed in the group receiving 40 mg/kg sildenafil for 28 days with a mean ICP/MAP ratio of 58 ± 6% compared to 32 ± 5% for control group ($P < 0.00001$). Immunohistochemistry demonstrated that sildenafil preserved smooth muscle mass, increased CD31 expression and reduced apoptosis compared to control.

CONCLUSION

In this animal model, daily sildenafil administration reduces the negative impact of CN crush injury on erectile function.

FUNDING

Pfizer Inc

P33

Macroscopic vasovasostomy! Is it worthwhile or a time to change to microscopic technique?

M. CHAUDHARY, N. SHEIKH, S. ASTERLING, P. MENEZES, P. JOHNSON and D. GREENE
Sunderland Royal Hospital, Sunderland, UK

OBJECTIVE

One in 5 men in the UK chooses bilateral vasectomy as a method of contraception. Unfortunately 2–10% of these men regret their decision and request reversal. Most District General Hospitals do not have facilities for microscopic reversal and still the macroscopic technique is widely practised.

METHODS

125 patients had reversal of vasectomy between July 1996 and June 2004. Mean age was 38 years (27–54 years). Mean vasectomy interval was 6.97 years (1–20 years). Bilateral vasovasostomy was performed in 88 patients while 37 had unilateral reversal of vasectomy.

RESULTS

106 of 125 patients provided at least one semen specimen. 19 failed to provide any semen specimen. Of 106 patients 86 had sperms in the specimen while 20 were negative. Patency rate was 86.6% in bilateral while 71% in unilateral reversal of vasectomy ($P = 0.055$). If the interval is less than 3 years, patency rate is 91%, 3–8 years 76%, 9–14 years 75%, 15 years or more 100%.

CONCLUSION

The macroscopic vasovasostomy are comparable to the microscopic technique. Given the advantages of time, skills and cost involved, macroscopic vasovasostomy is still worthwhile. Bilateral vasovasostomy has better results compared to the unilateral reversal of vasectomy.

P34

Repeated ejaculations on the quality of sperms following spinal cord injury – is it worthwhile?

R. HAMID, P. PATKI, H. BYWATER, J. SHAH and M. CRAGGS
Spinal Research Centre, Royal National Orthopaedic Hospital, Stanmore, UK; Institute of Urology and Nephrology, London, UK

INTRODUCTION

The sperm quality deteriorates following spinal cord injury (SCI). We evaluated the effects of repeated ejaculation on the quality of sperms following SCI in a prospective study.

METHODS

Seventy-four patients with SCI above T10 were tested for vibro-ejaculation using a Ferticare penile vibrator. The successfully vibro-ejaculated subjects ($n = 32$) were randomised into study arm ($n = 18$) and control arm ($n = 14$). The patients in the study arm vibro-ejaculated weekly for 3 months whilst the control group vibro-ejaculated at baseline and at the end of 3 month period. The semen was compared for statistical significance across the two arms using a two-tailed student *t*-test.

RESULTS

Ten in the study arm and 9 in control have completed the study so far. Six patients have dropped out of study and 3 from control arm for various reasons. The morphology and forward progression of sperms shows a statistically significant increase in the study arm. The motility improves but is not statistically significant in the study group.

CONCLUSIONS

We conclude that repeated ejaculations do improve the quality of sperms in SCI patients and they should undergo repeated ejaculations for at least 3 months before trying insemination techniques. This is close to natural conception and saves money.

FUNDING

ASPIRE- charity for spinal cord injury patients

P35

Transrectal electroejaculation combined with intracytoplasmic sperm injection: an effective treatment of male infertility in anejaculatory

K. AL-MITWALLI*, S.R. EL-FAQIH† and L. KHALIL*
**Dallah Hospital, Riyadh, Kingdom of Saudi Arabia; †King Khalil University Hospital, Riyadh, Kingdom of Saudi Arabia*

INTRODUCTION

Electroejaculation (EE) has been successfully used for sperm procurement in anejaculatory men. Intracytoplasmic sperm injection (ICSI) has made it possible to achieve pregnancies with minimal sperms. In this study, we report our experience in treating anejaculatory men using combined EE & ICSI.

PATIENTS AND METHODS

Thirty anejaculatory men were treated with combined EE & ICSI. The aetiologies were spinal cord injuries SCI ($n = 11$), psychogenic ($n = 10$), and anejaculation of medical causes ($n = 9$). Electroejaculation was performed using the transrectal probe, Seager model 14. The retrieved sperms were used for ICSI in 24, the remaining 6 were interested to determine fertility potential.

RESULTS

Semen was obtained in all 30 patients (100%), 28 antegradely and 2 retrogradely, sperms were retrieved in 29 of 30 (96.6%). No complications. In the SCI group ICSI was performed on 6 partners with 3 pregnancies resulting in live birth (50%), in the psychogenic group 10 partners underwent ICSI with pregnancy resulting in live birth in 2 cases (20%). In the third group, 7 partners underwent ICSI with one pregnancy resulting in live birth (14%).

CONCLUSION

Electroejaculation is reliable method of obtaining sperms from anejaculatory men. Its safe, reproducible and is non-invasive in comparison to testicular aspiration and open biopsies.

P36

Can the outcome of intracytoplasmic sperm injection be predicted by genetic screening of spermatozoa?

J.D.M. NICOPOULLOS, C. GILLING-SMITH, P. ALMEIDA and J.W.A. RAMSAY
Chelsea & Westminster Assisted Conception Unit, Chelsea and Westminster Hospital, London, UK

INTRODUCTION

We present preliminary data of a prospective study assessing whether genetic screening of spermatozoa can predict the outcome of intracytoplasmic sperm injection in subfertile men.

PATIENTS AND METHODS

Sperm DNA fragmentation was assessed using the sperm chromatin structure assay (median 5816 sperm analysed per sample). The correlation between the DNA fragmentation index (DFI) and semen parameters and effect of DNA fragmentation on ICSI outcome was determined on the first 22 couples recruited.

RESULTS

Semen parameters assessed did not correlate with total DFI or high DFI (Spearman correlation, $P > 0.05$). Clinical pregnancy rate was higher in men with a 'low' total DFI (<15%) compared to men with 'medium/high' total DFI (>15%: 50% vs 28.6%). There was a trend for an increased Total DFI (median 17% vs 14.5%) and high DFI (4% vs 2.5%) in failed ICSI cycles. Although these trends do not reach statistical significance in our current sample number, further analysis is awaited.

CONCLUSION

Our data suggests there may be a role for genetic sperm screening in the work-up of ICSI patients, highlighted by the lack of correlation between DFI and conventional semen parameters. The significance will become clearer when recruitment is complete and when sperm aneuploidy data is included.

P37

Baseline characteristics of patients with erectile dysfunction (ED) and a history of prostatectomy or other pelvic surgery: UK results from the pan-European Erectile Dysfunction Observational Study (EDOS)

C. GINGELL, A. RILEY, M. NOONE, J. ARELLANO and A. BEARDSWORTH
Bristol Royal Infirmary, Bristol, UK; University of Central Lancashire, Preston, UK

INTRODUCTION

Baseline characteristics of UK men with ED who have undergone prostatectomy surgery or other pelvic surgery as observed in EDOS are discussed here.

PATIENTS AND METHODS

1362 UK men seeking treatment (new or switch) for ED were enrolled in a 6-month prospective observational study.

Data collected at visit 1	Post prostatectomy/other pelvic surgery
n	111
Mean age, years (range 18–84)	65.3
Aetiology	
n	112
Psychogenic	0.9%
Organic	60.7%
Mixed	38.4%
ED history	
n	111
>1 year	82.7%
ED presence	
n	111
Consistent ED	94.6%
Intermittent ED	5.4%
Physician perceived severity	
Severe ED (*n* = 57)	50.9%
IIEF-EF domain score	
n	107
Mild (17–25)	22.5%
Moderate (11–16)	25.2%
Severe (1–10)	48.6%
GAQ 1 – Yes (*n* = 53)*	64.2%
GAQ 2 – Yes (*n* = 33)†	87.9%

**GAQ 1, Has the treatment you have been taking during the last 4 weeks improved your erection?*
†GAQ2, If yes, has the treatment improved your ability to engage in sexual activity?

RESULTS

1344 patients were eligible for analysis. 112 (8.3%) patients had undergone prostatectomy or other pelvic surgery.

CONCLUSIONS

In this cohort of men symptoms of ED were generally consistent and severe. However of the patients taking any treatment for their ED in the previous 4 weeks (*n* = 53), 64.2% reported it had improved their erections.

P38

Who should be running an erectile dysfunction (ED) clinic?

S.K. GUPTA, L. PIDCOCK and P.W. KUTARSKI
Arrowe Park Hospital, Wirral, Liverpool, UK

INTRODUCTION

ED and coronary heart disease (CHD) have common risk factors. A high incidence of ED is seen in patients with CHD. It has been suggested that a cardiologist rather then a urologist should run ED clinics (Solomon *et al.* IJCP. 2003; 57: 96–9). To have a cardiologist running an ED clinic would be cost-effective only if ED patients without previously diagnosed CHD have a higher risk of developing CHD. We compared the risk of developing CHD in patients referred to an ED clinic with a similar population attending a prostate clinic.

METHOD

Over a period of 12 months, 114 new patients attending an ED clinic and 113 patients from a prostate clinic were recruited. Patients with known CHD were excluded. The ED and cardiac status of the patients were assessed using IIEF questionnaire and Framingham coronary heart disease (FICHE) prediction score.

RESULTS

There was no significant difference in prevalence of any risk factors (table)

	E D group ($n = 114$)	Prostate group ($n = 113$)	*P*-value
S. cholesterol	43.8%	41.5%	0.7
Hypertension	74.3%	63.1%	0.7
Diabetic	14.0%	9.7%	0.3
Smoker	28.9%	18.5%	0.06
Age	59.2	63.3	0.06

IIEF index was significantly lower in ED patients. However, the risk of CHD was not significantly higher in ED group as expected.

DISCUSSION

There would seem little to justify cardiologists running ED clinics; particularly as physicians are not trained to provide all ED treatment options or to deal with their potential complications. We feel that urologists are best qualified to run ED clinics.

P39

Ischaemic priapism: acute vs delayed penile implant insertion results in fewer complications

P. KUMAR, A. MUNEER, N. CHRISTOPHER, D.J. RALPH and S. MINHAS
St Peter's Andrology Centre & The Institute of Urology, University College London, London, UK

INTRODUCTION

Patients with ischaemic priapism refractory to conservative measures inevitably develop cavernosal fibrosis, penile shortening and long-term erectile dysfunction. This study compares the results of immediate versus delayed penile implant insertion in the treatment of this condition

METHODS

A total of 31 patients with a history of ischaemic priapism were identified. All had failed conservative measures including instillation of α-agonist and shunt surgery. The results of acute implant surgery within 21 days of developing ischaemic priapism were compared to delayed prosthesis insertion.

RESULTS

Twenty-one patients underwent acute and ten delayed implant insertion. Mean duration of priapism prior to insertion was 8 days (range 4–13 days) vs 25 months (range 2–96 months). Mean follow-up was 17 months in acute and 40 months in delayed groups. All patients were satisfied and reported normal erectile function (mean FIEF, range 23–25). Operative time was similar in both groups. Complications occurred in 1/21 (5%) in the acute group: prosthesis infection and subsequent revision. In the delayed group prosthesis erosion requiring multiple revisions occurred in 3/10 (30%) of patients.

CONCLUSION

Patients who fail conservative management of ischaemic priapism should be given the option of the immediate insertion of a penile prosthesis. Immediate insertion is associated with fewer long-term complications at this stage.

P40

Long-term results of emobilisation in high flow priapism

P. KUMAR, V. AGRAWAL, O. KAYES, D.J. RALPH and S. MINHAS
The St Peter's Andrology Centre and Institute of Urology, University College London, London, UK

INTRODUCTION

Emobilisation of the arterial-lacunars fistula is the management of choice in high flow priapism. This study aims to ascertain the long term results of this therapeutic intervention.

MATERIALS AND METHODS

Fifteen patients with high flow priapism were identified. Data consisted of a validated questionnaire administered in outpatients and a retrospective case note review.

RESULTS

Mean patient age was 29 (range 12–52 years). 12/15 patients had normal erectile function prior to priapism (IIEF 20+). Aetiology was trauma (10/15), sickle cell (2), self-injection (1), unknown (2). Due to difficulties in diagnosis, six patients had phenylephrine injection and three had shunt surgery. Mean interval between onset of priapism and emobilisation was nine days. Although eight patients required a repeat emobilisation, detumescence was achieved in all patients with no immediate complications. Mean follow up was 42 ± 8 months. 11/15 reported a return to normal erectile function (IIEF 20+). 3 patients had undergone insertion of penile prosthesis (2 of these had shunt surgery prior to emobilisation) and 1 required oral pharmacotherapy.

CONCLUSIONS

Selective emobilisation for high flow priapism is a safe, efficacious and well tolerated procedure that preserves premorbid erectile function. Multiple procedures may be required. Shunt surgery increases the risk of subsequent erectile failure.

Tuesday 28 June 16.00–17.00
Diagnosis and Treatment on Superficial Bladder Cancer
Chairmen: G. Durkan and J. Whiteway

P41

Is routine urine cytology useful in the haematuria clinic?

S. VISWANATH and R. MILLS
Norfolk and Norwich University Hospital NHS Trust, Norwich, UK

INTRODUCTION

This study evaluates the clinical value and cost effectiveness of routine urine cytology in a one stop haematuria clinic.

PATIENTS AND METHODS

678 consecutive patients who attended the haematuria clinic between June 2003 and May 2004 were studied prospectively. A standard protocol was used to investigate all patients.

RESULT

Cancer was detected in 84 (12.4%) of the 678 patients (76 bladder transitional cell carcinoma, 4 upper tract transitional cell carcinoma and 4 renal cell carcinoma). 64 patients had abnormal urine cytology. 46 of these were found to have bladder tumour at flexible cytoscopy and one had bilateral upper tract transitional cell carcinoma that was detected by IVU. The remaining 17 patients with abnormal cytology were not found to have cancer on further investigations. Of the 80 patients with transitional cell carcinoma, urine cytology was positive in 47 (59%). All of these were detected by other protocol investigations. The total cost for urine cytology on 678 samples was 29 950.00 sterling pounds.

CONCLUSION

In the twelve month study period, no case of urothelial malignancy was diagnosed on urine cytology alone. Urine cytology should be reserved for selected high risk cases and not used routinely in the initial diagnostic work up for haematuria.

P42

Is urine cytology obsolete in investigating haematuria? A large prospective study

K. JANJUA, A. MARTINDALE, E. ONG, J. ROYLE and S.F. MISHRIKI
Aberdeen University Hospitals NHS Trust, Aberdeen, UK

INTRODUCTION

All current guidelines for haematuria investigation recommend mandatory urine cytology. However, with a low sensitivity, especially for low grade tumours, the evidence for its continued use is weak.

PATIENT AND METHODS

1812 consecutive patients were prospectively studied from January 1999 to date. Data set includes age, sex, frank haematuria (FH) or microscopic haematuria (MH). Patients underwent ultrasound scan of the renal tract and flexible cystoscopy. Urine cytology was submitted. IVU was arranged later for undiagnosed FH.

RESULTS

The male to female ratio was 2 : 1 with 55% of patients presenting with FH. Irrespective of age, 39 (4.8%) of MH and 205 (20.6%) of FH patients were diagnosed with urological malignancy. The sensitivity and specificity of urine cytology were 38.1% and 99.8% respectively. Urine cytology detected one primary carcinoma in-situ bladder in which the cystoscopy was incorrectly reported as normal. The observed finding of 'mild' mucosal erythema alone should have necessitated bladder biopsies, irrespective of urine cytology results. Urine cytology was negative in two cases of renal TCC.

CONCLUSION

This prospective analysis shows that omitting urine cytology is not detrimental in investigating patients with haematuria. Continued routine use of cytology in the haematuria clinic cannot be supported by current evidence.

P43

CT as a primary imaging modality for high risk haematuria

Z. MAAN, F. SODEN, L. CLARKE, D.E. NEAL, W.H. TURNER and J.D. KELLY
Addenbrooke's Hospital NHS Trust, Cambridge, UK

INTRODUCTION

Ultrasound (US) and Intravenous Urogram (IVU) are gold standard for upper tract imaging for investigation of haematuria. The objective of this 'Action On' initiative was to assess feasibility of Computerised Tomography (CT) as first-line imaging for high risk haematuria.

PATIENTS AND METHODS

Patients with macroscopic haematuria over 40 underwent contrast enhanced CT and flexible cystoscopy.

RESULT

88 patients were assessed (Male to female 2 : 1, mean age 67 years). Bladder tumours were identified in 9 patients by CT and 15 by cystoscopy. No upper tract tumours were found. 1 patient had a renal tumour and 8 patients had renal calculus disease. One case of gallstones and one case of lower oesophageal carcinoma were detected. Based on national tariffs, CT costs £116 compared with £67 (US) and £123 (IVU).

CONCLUSION

This study shows that CT in this setting is feasible. Advantages include streamlined diagnostic pathway (one imaging modality only required), detection of other pathology, synchronous diagnosis and staging of invasive tumours and decreased cost compared to IVU. CT is unable to resolve smaller bladder lesions and cannot replace cystoscopy. The accuracy of CT for detection of upper tract tumours, which are uncommon, is unknown and should be further evaluated.

P44

Audit of nurse led flexible cystoscopy – results from a single centre in UK – learning curve and cost implications

S. RADHAKRISHNAN, T.J. DORKIN, P. JOHNSON and D.R. GREENE
Sunderland Royal Hospital, Sunderland, UK

AIM

The aim of this study was to assess the impact of nurse led flexible check cystoscopy (FCC) service on patient referral for general anaesthetic (GA) cystoscopy.

METHODS

Patients who had FCC performed independently by specialised urology nurses during January–April, 2003, and who were subsequently referred for GA procedure were compared to FCC performed by the medical staff during the preceding 5 month period. A reaudit for the nurse led group was done during January–April, 2004.

RESULTS

Nurses referred 54/202 (26.7%) patients for GA cystoscopy whereas the doctors referred 31/332 (9.3%) patients for GA procedures ($P < 0.001$). This was 15.9% ($P = 0.0626$) for the nurse led list in the reaudit. For patients who had a normal GA cystoscopy (i.e. no abnormal areas to biopsy), the difference was statistically significant ($P = 0.0019$ for the first audit and $P = 0.0322$ for the reaudit). The extra cost incurred for additional GA procedures due to nurse led FC sessions was 48 000 pounds during the initial four month period and 30 000 pounds during the four month reaudit period.

CONCLUSION

Specialist nurses have a long learning curve and hence the current recommendations after which the nurses are allowed to do flexible cystoscopy independently has to be revised.

P45

How do flexible cystoscopy findings compare with those at general anaesthesia in a nurse led service?

J.M. LEWIN and E.W. LUPTON
South Manchester University Hospitals, Manchester, UK

INTRODUCTION

Flexible cystoscopy (FC) is a cornerstone in the diagnosis and management of bladder cancer. Initially performed by surgeons, the procedure is often now being handed over to specialist nurses, due to pressures on the surgeons time. Questions exist as to whether nurses, with little experience of general anaesthetic (GA) cystoscopy, are over-diagnosing lesions requiring further investigation.

PATIENTS AND METHODS

All patients undergoing FC in the period 2003–2004 were identified retrospectively and correlated with those undergoing GA cystoscopy. Patients were categorised as either new or surveillance and the findings at each procedure recorded and compared.

RESULTS

50 of the 63 patients who went on to GA endoscopy were traced for the study. In the new patient group 69% had identical findings at GA endoscopy, 22% were unable to tolerate FC, only 2 (6%) patients had different findings. One patient had a bladder stone not a TCC at GA endoscopy and the other did not have a phimosis. All patients with red areas required biopsy under GA. Findings at FC and GA were identical in the surveillance group.

CONCLUSIONS

Findings at nurse led FC accurately represent later GA findings. Nurse practitioners to not over refer for GA cystoscopy.

P46

Meeting bladder cancer waiting time targets using improved communications across the haematuria pathway – the benefits of an integrated care electronic patient record and novel ways to inform patients

J. CONNOLLY, G.M. FLANNIGAN, A. CATCHPOLE, T.K. SHAH, R. PURI and C. MASON
Bradford Royal Infirmary, Bradford, UK

INTRODUCTION

Accurate, recordable and appropriate communication is essential for the satisfactory management of diagnostic and treatment pathways. This study examined new ways of meeting these objectives allowing a reduction in clinical episodes for patients with haematuria.

PATIENTS AND METHODS

Between March 2003 and October 2004, 256 patients with haematuria were invited to participate in this study. 27 patients withdrew from the study. An integrated care electronic patient record, SystemOne™, formed the cornerstone of the changes. GPs had open access booking to diagnostic cystoscopy for haematuria patients. Referrals were triaged by intermediate care staff and other screening tests booked via a central haematuria office. A haematuria journal explained the pathway to patients allowing a reduction in the number of face to face meetings.

RESULTS

The number of clinical episodes for patients with bladder tumours was reduced from 10 to 6 and for patients with microscopic dipstick positive haematuria from 6 to 3. Consultants met patients only at the time of bladder tumour resection and the subsequent histology discussion.

CONCLUSIONS

New methods of communicating between carers and with patients can reduce the number of steps in the haematuria pathway and free up resources for other patients.

FUNDING

The NHS Modernisation Fund Pursuing Perfection Project

P47

Microscopic haematuria – 11 year prospective follow-up study

S.F. MISHRIKI and N.P. COHEN
Aberdeen University Hospitals NHS Trust, Aberdeen, UK

INTRODUCTION

The natural history of asymptomatic microscopic haematuria, the outcome of patients with negative initial evaluation and a rationale plan for follow-up are unknown.

PATIENTS AND METHODS

292 consecutive patients with asymptomatic microscopic haematuria referred between 1992 and 1994 were prospectively investigated. This included urinalysis, urine culture and sensitivity, cytology, intravenous urography, or ultrasound plus plain abdominal X-ray and cystoscopy. Records of all the patents were reviewed after a follow-up period of 10–12 years.

RESULTS

21 patients were lost to follow-up. 42 died of unrelated causes. Of 16 diagnosed with urological malignancy on initial evaluation, 11 died and 5 are alive. Out of remaining 213 patients, 180 subsequently had negative urine analysis. Microscopic haematuria persisted in 33. Out of these, 10 had nephrological causes, 8 urinary tract infection and 15 were reinvestigated with negative pathology. One patient discharged after negative full investigations, presented two years later with frank haematuria and was found to have a new bladder tumour.

CONCLUSION

Patients with asymptomatic microscopic haematuria can be discharged after initial negative thorough assessment. Nephrological referral is recommended if microscopic haematuria and proteinuria persist. Repetition of the urological investigations is unwarranted unless patients present with symptoms or develop frank haematuria.

P48

Superficial bladder cancer is less likely to progress in patients taking regular aspirin

J.C. GODDARD, C.D. SUTTON, R.C. KOCKELBERGH and K.J. O'BYRNE
University Hospitals of Leicester NHS Trust, Leicester, UK

INTRODUCTION

Aspirin and other non-steroidal-anti-inflammatory-drugs (NSAIDs) inhibit tumour growth in a wide variety of experimental systems and have been associated with decreased risk of developing bladder cancer. This study examines the influence of regular aspirin or NSAID consumption on the subsequent progression of superficial bladder cancer (SBC).

METHOD

In a retrospective study of 293 cases of SBC, aspirin or NSAID consumption at first presentation was recorded by casenote review. Aspirin and NSAID use was correlated with progression, microvessel density (MVD) and p53 status of the resected tumours.

RESULTS

Of the 293 cases, 76 subsequently progressed to invasive disease. Those patients that did not progress were significantly more likely to be taking regular aspirin ($P = 0.014$) at presentation. In a binary logistic regression model, not taking aspirin was a predictive factor for subsequent progression ($P = 0.026$). There was no apparent correlation between aspirin consumption and MVD or with p53 status. In a multivariable binary logistic regression model which included, stage, grade, p53 status, MVD and aspirin consumption, aspirin remained an independent prognostic factor for progression ($P = 0.017$).

CONCLUSION

In this study, for the first time, aspirin has been shown to be associated with a decreased risk of progression from superficial to invasive bladder cancer.

P49

Is intravesical therapy (IVT) for bladder cancer associated with urethral strictures?

A. PATEL and W. TURNER
Addenbrookes NHS Foundation Trust Hospital, Cambridge, UK

INTRODUCTION

Following a cluster of urethral strictures after intravesical Mitomycin or BCG for bladder cancer, we retrospectively identified urethral strictures in patients on Mitomycin/BCG therapy. We assessed their incidence, treatment for stricture and the impact of strictures on IVT.

PATIENTS AND METHODS

Using our in-house Access database, we identified all men receiving IVT between 1999 and 2004: demographics, intravesical therapy used, number of instillations, presence of stricture, treatment for stricture, and cessation of IVT because of stricture were determined.

RESULTS

128 cases identified (108 had complete notes for analysis). Median age 73 years, 70 patients received BCG alone, 24 Mitomycin and 14 combinations. The median number of individual instillations was 12 per patient. 33 patients identified with strictures; (21 BCG, 5 Mitomycin and 7 combination). 1 patient had a stricture at presentation. Of these 33, 71 procedures were recorded (optical urethrotomy 47, Otis urethrotomy 22, dilatation 1, suprapubic catheter 1). 12 patients required intermittent self catheterisation for stricture. No treatment course was discontinued for stricture.

CONCLUSION

This study shows a high incidence of urethral strictures in patients undergoing IVT for treatment of superficial bladder cancer, but no patient stopped IVT because of stricture.

P50

A similar surveillance schedule for G2Ta and G1Ta bladder tumours permits safe discharge at 5 years: results of a 25-year prospective database

P. MARIAPPAN and G. SMITH
Western General Hospital, Edinburgh, UK

INTRODUCTION

As a part of a series of studies on superficial bladder tumours, we compared the recurrence and progression trends of G2Ta and G1Ta tumours to ascertain if a common surveillance regime could be employed for both. Results for G1Ta appear in the J. Urol. in April 2005.

MATERIALS AND METHODS

A prospectively kept, computerized record of bladder cancers diagnosed between 1978–85 and followed up at one tertiary urology centre was reviewed.

RESULTS

Patients with G1Ta (115) and G2Ta (37) were followed up for a mean 19.4 years. Tumour status at 3 months and 1 year were strong prognostic factor for recurrence. There was no significant difference in the recurrence trends for both G1Ta and G2Ta at 3 months ($P = 0.525$), 1 year ($P = 0.836$), 5 years (0.77) and 10 years (0.33). Of those who never had a recurrence to 5 years, 98.3% G1Ta patients and all G2Ta patients remained tumour free up to 20 years. In contrast, those with recurrence at 3 months had a much higher recurrence rate. Progression rates were 12% (G1Ta) and 10.8% (G2Ta).

CONCLUSION

G1Ta and G2Ta appear to behave identically in this cohort of patients and can safely be scheduled for similar surveillance regimes.

Wednesday 29 June 09.30–10.30
Clinical Governance
Chairmen: M. Harrison and P. Jones

P51

Nurse-led follow-up clinics for men with stable prostate cancer

A. SOMERVILLE, T. MURRAY and C.J. BUNCE
Barnet and Chase Farm Hospitals NHS Trust, Barnet, UK

The increasing prevalence of prostate cancer places pressure on services, leading to questions about how best to configure services, so as to maintain quality and best utilise the skills of the Multidisciplinary Team. This paper aims at describing the development of a Nurse-Led stable prostate cancer follow-up clinic, and what effects and possibilities this type of advanced nursing practice gives the patients, the healthcare system and the nurses. Previously the prostate cancer patient pathway was fragmented. Patients had to visit different healthcare professionals up to sixteen times a year to monitor and treat their disease. The new service was instigated as part of the 'Action on Urology' initiative and is led by two dedicated prostate cancer nurse specialists who provide a holistic, patient centred service, where bloods are taken, LHRH analogue's given, and a patient assessment recorded. A telephone callback service to patients has been established for blood test results and information/support as necessary. This paper demonstrates that nurse-led follow-up services are acceptable, appropriate and effective. Combined with use of the telephone, such services can be an efficient means of maintaining contact with a large client group, to provide vital support.

P52

A national survey of the nurse practitioner role in urology

S.B. MIRZA, K. ALEXANDROU, L. MORGAN and J.A. FRENCH
Royal Glamorgan Hospital, Llantrisant, UK

INTRODUCTION

Recent changes in medical training have led to a corresponding expansion of the nurse practitioner (NP) role. This national survey looked at role of the NP in UK urological practice.

MATERIALS AND METHODS

A postal questionnaire was sent to 500 consultant urologists. We asked about current practice and sought views on NPs carrying out a variety of clinical tasks in future.

RESULTS

Response rate was 70%. Respondents were in post for a median of 10 years. 60% work in units employing 3 or more NPs. One third of respondents involved NPs in ward work and 2/3 in pre-operative clinics. About 2/3 said NPs run prostate cancer follow-up and one-stop BPH clinics. 30% actively involved NPs in haematuria clinics and flexible cystoscopy lists. Only a minority of NPs are doing urinary tract ultrasound or prostatic biopsies. NPs run most erectile dysfunction clinics. Newly appointed consultants appear less likely to accept the extended NP role.

CONCLUSION

This survey confirmed that NPs are part of most urological teams in the UK. Increasingly, they are taking over roles traditionally reserved for doctors. Although the majority of consultants accept this change, there are concerns over accountability, training and the lack of nationally accepted qualifications.

P53

Translocation of office urology from secondary to primary care: a 2 year nurse-led pilot study

C.M. BOOTH, C. FOREMAN, K. SMITH, S. NICOL, L. POWELL and V. LYNCH
Colchester General Hospital, Colchester, UK

This Modernisation Agency Action on Urology pilot provides results and lessons learned during a 2 year collaboration between 1 DGH and 2 PCTs (pop. 325 000) to provide all 'office urology' as a primary care nurse-led service. Six clinical activities were performed by specialist nurses or ultrasonographers: prostatic assessment, intravesical chemotherapy, pressure/flow urodynamics, andrology, cystoscopy, abdominal ultrasonography. In our isolated rural PCT all services were successfully implemented despite many unexpected problems. In the central PCT surrounding the DGH only prostatic assessment and andrology ultimately translocated and we concluded that a DGH specialist urology suite remained the best service model. Overall, prostatic assessments doubled, whilst nurse cystoscopy and ultrasonography shortened patient journeys and reduced pressure on our DGH day unit. All patients preferred the new local services compared to their former DGH experience. The main consultant roles have been supervision, training, the ensuring of competencies, and supporting isolated staff in new roles. With all clinical services successfully provided by nurses and ultrasonographers, we see no role for PCT 'office urologists'.

P54

The feasibility of a one-stop approach for all urological patients

T.S. O'BRIEN, E.R. RAY, B. COKER, M. PARDOS-MARTINEZ and E. JENKINS
Guy's and St. Thomas' Hospitals, London, UK

AIM

To test the clinical effectiveness and operational efficiency of a one-stop model of outpatient care for new urological referrals.

PATIENTS AND METHODS

330 patients, referred between July and October 2004, were invited to one of nine pilot clinics where ultrasound, cystoscopy, and flow studies were available. Urine and blood tests were requested beforehand. Two week wait referrals could not be included.

RESULTS

254 consultations have been analysed. 23 patients cancelled their appointment; 50 patients did not attend and 3 consultation records are unavailable. 81% patients received a firm diagnosis and 46% were discharged. Only 19% of patients required follow-up for diagnosis ranging from 2% for penoscrotal disorders to 70% for patients with raised PSA. An estimated 550 hospital visits and 350 outpatient appointments have been saved. Waiting times for outpatients have been reduced from 15 weeks to 6 weeks. Future improvements in efficiency might include incorporating urodynamics ($n = 8$) and prostate biopsy ($n = 10$) in the one-stop clinics and by rationalising the review of patients commenced on alpha-blockers ($n = 9$) and antibiotic prophylaxis for UTI ($n = 5$).

CONCLUSION

A one-stop method of consultation is effective and efficient across a full range of presenting complaints. It should become the standard of care.

P55

A large service redesign project to provide rapid diagnostic one stop urology across three trusts on a community-based site

K. ANSON, C. ANDERSON, R. MORLEY and J. DICK
St George's Hospital, London, UK; Kingston Hospital, Kingston, UK; Queen Mary's Hospital, Roehampton, UK

INTRODUCTION

A national action on project led to the development of a rapid diagnostic, one stop urology service in a primary care setting serving two large secondary and tertiary Urology departments.

METHODS

The service comprises: (1) Initial consultation with nurse practitioner or medical staff, (2) Diagnostic tests including uroflowmetry, video pressure/flow urodynamics, KUB X-ray, renal, scrotal and transrectal ultrasound, CT scanning and videocystoscopy, (3) Follow up consultation to provide diagnosis and treatment plan. Referral protocols have been designed to allow a seamless transition for the choose and book and electronic booking agendas. 3 separate patient forums and 9 different local primary care trusts approved the service redesign.

RESULTS

The service was launched in October 2004 and has been well received by patients and healthcare staff. Logistical problems have arisen and are being addressed. Over 1000 patients have been seen so far and prospective audits of the service are running.

SUMMARY

The rapid diagnostic one stop service for general urology across three trust sites has started and initial impressions are encouraging. The multidisciplinary team approach is vital. The service redesign is better for patients and is proving popular with all healthcare staff.

P56

A direct access GPwSI urology outpatient service

E.J. PICK, J.P. BRITTON, P.G. CARTER and S. VENN
Department of Urology, St Richards Hospital, Royal West Sussex Trust, West Sussex, UK

INTRODUCTION

As part of the Action On programme, a pilot GPwSI (General Practitioner with Special Interest) outpatient clinic was set up to see and assess male patients with symptoms of bladder outflow obstruction.

PATIENTS AND METHODS

The weekly clinic was staffed by a GP, already working in urology and by a specialist nurse. Over 7 months, the fast-track one-stop assessment clinic accepted direct referrals of patients with symptoms of bladder outflow obstruction (BOO) from primary care. Assessment included uroflow measurement, bladder scan, dipstick urinalysis and digital rectal examination.

RESULT

56 patients were seen in 21 clinics over 7 months. The referral rate was static and there was no increase in the number of referrals with time. 42% patients had evidence of BOO and treatment was recommended. 30% patients were referred to secondary care for further investigation. Patient satisfaction was high with a mean score of 86%.

CONCLUSION

Although patients who attended the clinic indicated a high satisfaction level for the service, the clinic was very under-utilised despite long waiting times in secondary care and a third of patients were referred to secondary care for further investigation. The service was not deemed a success. Reasons for this will be discussed.

FUNDING

Modernisation Agency

P57

What impact will shortened training have on urological service delivery?

M.B.K. SHAW and S.R. PAYNE
Manchester Royal Infirmary, Manchester, UK

INTRODUCTION

Modernising Medical Careers dictates a shortening of urological training. This study's aim was to stratify urological workload to determine what a urological trainee, undergoing shortened training, might be expected to do as a consultant.

MATERIALS AND METHODS

A prospective cohort study of all urological activity over three years was performed. Out-patient, in-patient and daycase activity was analysed with stratification of the absolute numbers of patients presenting for different types of outpatient consultation and different grades of surgery; the theatre resource each complexity consumed was analysed separately.

RESULTS

Aggregated information about 18 771 outpatient episodes and 4595 operative procedures demonstrated the contributions generalist and sub-speciality activity made to this department's overall workload. Whilst the majority of outpatient activity, and almost 88% of the numerical operative workload, could be accomplished by consultants undergoing shortened training 11.9% of specialised urological activity, consuming 43% of the theatre resource, was outside their expected competence.

CONCLUSIONS

Shortened training can satisfy service delivery for the majority of urological activity. It does not provide the sub-specialists needed to cope with the large minority of patients necessitating complex surgical intervention. Specialist training programmes promoting advanced operative skills are essential to ensure global urological service provision for the future.

P58

Incorporating the views of patients in the design of urological care

T.S. O'BRIEN, E.R. RAY, B. COKER, M. PARDOS-MARTINEZ and E. JENKINS
Guy's Hospital, London, UK

INTRODUCTION

A key criterion of high quality medical care is that it is patient centred. This is particularly important at a time of change in the way services are delivered e.g. office urology/Improving outcomes guidance. In 2004 we engaged in a patient consultation exercise as part of our plans for the development of office urology.

METHODS:

1. 250 patients attending pilot one-stop clinics were asked for feedback to help improve subsequent clinics.
2. 40 patients were invited to special patient consultation days.

RESULTS

Key messages included:

- One stop clinics are very popular.
- Better verbal/written information is required at all stages of care.
- Avoid interruptions in consultations.
- New referrals want to see consultant urologists.
- Promote the role of specialist nurses in managing established disease.
- Cancer patients need multidisciplinary clinics.
- Introduce disease-specific education/clinic days.
- Huge variation in the enthusiasm for management in primary care, and is only acceptable if easy re-entry to the system is provided.
- A single point of contact (clinical/administrative) is desirable.
- Improve telephone access.
- Use preferred method of communication e.g. letter, telephone, text, email.
- Minimise late cancellation of appointments.
- The patients trust us to develop good ideas.

CONCLUSION

This patient consultation exercise has helped us design better services.

P59

Suitability of London Patient Choice referrals to a diagnostic and treatment centre

T. NITKUNAN, J. CONSTANTINOU, R. NAUTH-MISIR and T. GREENWELL
Institute of Urology, Middlesex Hospital, UCLH, London, UK

INTRODUCTION

London Patient Choice (LPC) aims to deliver faster elective surgical treatment for NHS long waiters. We have assessed the outcome of LPC patients referred to our diagnostic and treatment centre (DTC).

PATIENTS AND METHODS

The notes of 219 patients of median age 63 years (range 17–90) were reviewed and data collated on patient demographics, listed procedure, previous investigations, need for further investigation at DTC, performance or not of listed procedure and reason for non-performance of listed operation.

RESULTS

Only 114 (52.1%) of LPC patients referred to our DTC had their listed procedure performed. Reasons for non-performance included; patient not fit for any surgery 20/219 (9.1%), listed procedure not suitable for DTC 16/219 (7.3%), further investigations required to assess suitability/appropriateness of surgery 43/219 (19.6%), no referral letter/history available 3/219 (1.3%) and patient refusal of surgery after preoperative counselling 21/219 (9.6%). Patients proceeding to surgery did so in a median of 37.7 days (range 5–176).

CONCLUSION

Only 52% of patients referred by LPC to our DTC were suitable for treatment. Of the patients unsuitable for treatment; 20% declined treatment, 19% were unfit for treatment and there were doubts as to the appropriateness of treatment in 43%.

P60

Should chaperones be mandatory in a 'patient-centered' urology service?

A.M. SINCLAIR and I. PEARCE
Manchester Royal Infirmary, Manchester, UK

INTRODUCTION

Risk management advocates the presence of a chaperone for all intimate examinations, however, in a 'patient-centered service' should this not be the patient's choice?

PATIENTS AND METHODS

Over a six month period all urology outpatients were asked to complete a questionnaire covering basic population data and more specifically their preference with respect to the presence or otherwise of a chaperone.

RESULTS

Of 709 completed questionnaires, (78% male), only 24.5% wanted a chaperone. 19% of men and 43% of women requested a chaperone. However, because we see more men than women, 62% of patients who required a chaperone were male and 38% female. Over half of both male (58%) and female (59%) patient's requesting a chaperone preferred a family member to fill the role. Age was not an influencing factor.

CONCLUSIONS

Traditionally chaperones are provided for all female patients, but in urological out patient clinics more men than women prefer chaperones and provisions should be made for this. Likewise 57% of women did not want a chaperone. Although current guidelines suggest that family members should only be used when there is no alternative, this study suggests that patients would prefer a family member to act as chaperone.

Wednesday 29 June 11.00–12.00
Prostate Cancer Diagnosis
Chairmen: N. George and A. Zietman

P61

Deprivation and prostate cancer: a population-based study

J.E. McCABE and P.M. JAVLE
Michael Heal Department of Urology, Leighton Hospital, Crewe, UK

INTRODUCTION

The IMD2004 is a new deprivation score for England calculated from 2001 census data. The country has been divided into 32 482 equally sized Super Output Areas (SOA) and a deprivation score calculated for each. We studied the incidence of prostate cancer screening and diagnosis in the SOA served by our hospital.

MATERIALS AND METHODS

In 2004 we identified 4693 men who underwent PSA testing in primary care. Over 5 years, 835 patients were newly diagnosed with cancer (154 underwent radical prostatectomy). Patient's SOA was derived from their postcode. The incidence of screening, diagnosis and treatment in each SOA was analysed with respect to the SOA national rank of deprivation.

RESULTS

16 local SOA were ranked within the most deprived 20% in England and 62 within the least deprived 20%. The proportion of men undergoing PSA testing was 1.5% in the most deprived SOA and 3.4% ($P = 0.03$) in the most affluent regions. There was a lower crude incidence of cancer in deprived SOA (76.7 versus 137.6 per 100 000) with less patients undergoing radical surgery (13.0% versus 18.8%).

CONCLUSION

The most affluent areas revealed significantly higher rates of PSA screening and an increased incidence of prostate cancer and rate of radical surgery.

P62

PSAwatch™ – a new, quantitative, point-of-care PSA assay

A. RAO, I. DAVIDSON, D. COCHRANE, M. EMBERTON, O. KARIM and I. WALKER
Wexham Park Hospital, Slough, UK

INTRODUCTION

PSA is routinely used as a serological marker for diagnosis and surveillance of prostatic disease. We present the first experience in the development of a new *quantitative* PSA assay (PSAwatch™) using a portable, point-of-care measuring device (BioScan™).

MATERIALS AND METHOD

Following ethical approval and appropriate consent, two blood samples were taken from patients ($n = 51$) attending outpatient clinic. One sample was submitted for laboratory PSA testing (DPC Immulite 2000 3rd generation). The second was evaluated using the BioScan™ system – 35 ml aliquots of heparinised blood and 20 ml of buffer were placed in the PSAwatch™ cassette, comprising of a porous cellulose membrane impregnated with monoclonal anti-PSA antibodies and gold sol. Antibody-PSA complexes induced an immuno-chromatographic response which was measured by the BioScan™ reader.

RESULTS

Correlation between the two methods was very good ($R^2 = 0.97$). The PSAwatch™ assay demonstrated a specificity of 99.5% with sensitivity to 0.25 ng/ml. Assay precision was <8% across the range tested (0–30 ng/ml).

CONCLUSION

This is the first report of a quantitative, portable, point-of-care PSA measuring device. PSAwatch™ will potentially decrease clinic visits for patients with prostate disease and allow immediate decision making on patients with or suspected of having prostate cancer. These improvements in patient care could also translate into significant cost savings for the NHS.

FUNDING

Mediwatch Plc

P63

Multimarker quantitative RT-PCR for molecular staging in prostate cancer

D.G. ROSS, I.G. McINTYRE, C.A. HART, V.A.C.R. RAMANI, M.D. BROWN and N.W. CLARKE
Uro-Oncology Research Group; Paterson Institute for Cancer Research, Christie Hospital, Manchester, UK

INTRODUCTION

We have developed a quantitative reverse-transcriptase polymerase chain reaction (qRT-PCR) assay using established and novel molecular markers to detect circulating prostatic cells in peripheral blood (PB) and bone marrow (BM).

METHODS

RT-PCR assays were designed and optimised for PSA, prostate specific membrane antigen (PSMA), prostate stem cell antigen (PSCA), human kallikrein 2 (HK2) and DD3. *In vitro* sensitivity was calibrated using dilutions of LNCaP cells in female PB. Paired PB and BM samples were assayed in sextuplicate from patients with well characterised CaP.

RESULTS

In vitro limits of detection were 1 LNCaP cell/10^5 nucleated cells (PSA and PSMA), $1 : 10^4$ (PSCA), $1 : 10^3$ (HK2) and $1 : 10^2$ (DD3). After correction for illegitimate transcription, specificity was good for PSA, HK2 and DD3. Specificity was poor for PSMA in BM and very poor for PSCA in PB and BM. Advanced patients (PSA > 100), PB RT-PCR was positive in PSA-50%, PSMA-31%, HK2-19%, DD3-12%. Localised disease (PSA < 10), % positive PB RT-PCR results were PSA-22%, PSMA-30%, HK2-6.5%, DD3-4.6%. BM results were broadly similar.

CONCLUSIONS

All markers except PSCA were reasonably specific. Patient sample results for the other markers are in keeping with other studies. Mathematical modelling to combine results of the 4 useful markers and correlate them with clinical outcome is ongoing.

FUNDING

NHS North West Regional Research and Development Office

P64

Biovariability of complexed PSA levels does not vary significantly

I. CAMPBELL, N.N.K. LYNN, E. PEARSON, P.H. O'REILLY and G.N. COLLINS
Department of Urology, Stepping Hill Hospital, Stockport, UK

INTRODUCTION

Biovariability of total PSA (tPSA) level is well recognized although that of complexed PSA (cPSA) is unknown. We studied the biovariability of cPSA and tPSA.

PATIENTS AND METHODS

A series of 112 men who underwent transrectal ultrasound and prostate biopsy were studied. Two sets of blood samples were taken before biopsy at least a week apart. Total, free and complex PSA were measured. Coefficient of variation (CV) was calculated for each and Wilcoxon Singed rank test was used to calculate the difference between two measurements. Receiver operating characteristic curve analysis was used to look at the area under the curve (AUC) for both measurements.

RESULTS

Median tPSA and cPSA for the first measurement (tPSA1 and cPSA1) were 8.45 and 6.6 ng/ml and the second measurement (tPSA2 and cPSA2) were 7.6 and 6.4 ng/ml. Median interval between measurements is 16 (range = 8–57) days. CV for tPSA and cPSA were 4% and 1.8%. tPSA changed significantly on second measurement ($P = 0.04$). However change in cPSA was not statistically significant ($P = 0.96$). AUC for tPSA1, cPSA1, tPSA2 and cPSA2 were 0.601, 0.616, 0.58 and 0.62.

CONCLUSION

Compared with cPSA, tPSA levels changed significantly in a short period.

P65

Quantitative alpha-methylacyl coenzyme A racemase (AMACR) polymerase chain reaction as a peripheral biomarker for prostate cancer

S.B. NAIR, C.P. PIPINIKAS, K.I. KONSTANTINOU, R.S. KIRBY, N.D. CARTER and C.D. FENSKE
St Georges Hospital Medical School, Tooting, London, UK; St Georges Hospital, Tooting, London, UK; Department of Epidemiology and Public Health, Faculty of Medicine, Imperial College, London, UK

INTRODUCTION AND OBJECTIVES

AMACR has been shown to be over-expressed in prostate cancer tissue (Rubin MA et al. JAMA. 2002; 287: 1662). Quantitative reverse transcriptase polymerase chain reaction (qRT-PCR) was investigated using AMACR as a biomarker for prostate cancer on patient blood samples.

METHODS

Blood was collected from patients attending the Urology clinic at St Georges Hospital, London. Messenger RNA was extracted and complimentary DNA (cDNA) synthesis was carried out (Invitrogen). The cDNA was amplified using AMACR specific primers in quantitative RT-PCR (relative to housekeeping gene GAPDH) (using the Light Cycler™). Patients were divided into 3 groups based on clinical, histopathological and radiological information: No Evidence of malignancy (NEOM), Localized Prostate Cancer (LCap) and Metastatic Prostate Cancer (MCap).

RESULTS

Following relative qRT-PCR mean AMACR expression levels were calculated: NEOM ($n = 12$) = 1.85E-06, Lcap ($n = 12$) = 2.91E-03, Mcap ($n = 18$) = 1.32E-01. There were significant differences between the 3 groups which was confirmed by Kruskal Wallis test (P-value = 0.001) and t-test (P-value = 0.001). No AMACR expression was found in 6/9 of the post Radical Prostatectomy samples. No AMACR expression was found in normal male controls. No correlation was found between AMACR expression levels and PSA/ Gleason values.

CONCLUSIONS

Significant differences in the expression of AMACR between the 3 groups make this a potentially useful non-invasive test for diagnosis and identifying progressive disease.

FUNDING

Swire Foundation, Everard Goodman, Prostate Research Campaign UK

P66

Prospective analysis of extended protocol TRUS guided prostate biopsies in the diagnosis of prostate cancer

S.J. GRIFFIN, B. CHAPPELL and J. McLOUGHLIN
West Suffolk Hospital, Bury St Edmunds, UK

AIM

To prospectively analyse the influence of peripheral zone biopsies over standard sextant biopsies in the diagnosis of prostate cancer in relation to prostate volume and pre-biopsy PSA.

METHODS

Patients with a clinically normal feeling prostate and age adjusted raised PSA, have been prospectively randomised to receive 12, 15 or 17 biopsies. Parasagital sextant biopsies are supplemented by 6 (12 and 15 biopsy protocol) or 8 (17 biopsy protocol) far lateral peripheral zone biopsies, or 3 basal biopsies (15 and 17 biopsy protocol).

RESULTS

Overall prostate cancer detection is 48% (61/128). Median PSA is 6.8 ng/ml (IQR 5.3–10.6 ng/ml), and is similar in each group ($P = 0.64$). Gleason Scores range from 6–9. Six additional far lateral biopsies (12 biopsy protocol) increase cancer detection by 11–20% – the increase being most pronounced with low PSA. Further peripheral zone biopsies may improve detection with low PSA, but do not seem to influence detection in glands greater than 50 ml. 12 biopsies appears to be the optimal number for PSA between 4.1–10 ng/ml.

CONCLUSIONS

This ongoing study confirms the benefit of further peripheral zone biopsies in addition to sextant biopsies. Early trends possibly suggest increased detection at low PSA by increasing the number of far lateral biopsies.

P67

Percentage positive prostate biopsy cores and margin positivity – is there a correlation with biochemical recurrence?

R. AYYATHURAI, K. ANANTHAKRISHNAN, W. ISLAM, H. TOUSSI, C.M. EVANS and V. SRINIVASAN
Glan Clwyd Hospital, Conwy and Denbighshire NHS Trust, Rhyl, UK

INTRODUCTION

We examined the role of positive surgical margin in postoperative biochemical failure and the percentage of cancer positive biopsy cores for the prediction of pathological stage, surgical margin status and biochemical failure in the our population.

MATERIALS AND METHODS

154 of 193 patients who underwent radical prostatectomy between 1993–2004 had complete pre-op staging including percentage of positive biopsy cores. Biochemical failure was defined as PSA > 0.2 ng/ml.

RESULTS

Pre-operative staging distribution was 46.6%-T1c, 39.3%-T2a and 9.8%-T2b. Percentage of positive biopsy cores was a significant predictor of capsular penetration ($P = 0.0006$), seminal vesicle invasion ($P < 0.0001$), lymph node involvement ($P = 0.04$), margin status ($P = 0.03$) and biochemical failure ($P = 0.0004$). 63/193 patients (32.6%) had at least one positive surgical margin. Out of these, 22 had positive solitary apical margin. 24/63 had biochemical recurrence, which was significant ($P = 0.003$). Four out of 22 patients with solitary positive apical margin had biochemical recurrence which was not significant ($P = 0.49$).

CONCLUSION

Percentage positive biopsy cores can predict pathological stage and biochemical failure in prostate cancer and should be included in patient counselling for radical prostatectomy. This study also confirms positive surgical margin as a high risk factor for biochemical recurrence. Patients with positive solitary apical margin are not at significant risk of biochemical recurrence.

P68

What do we do with patients who have a high PSA but a negative TRUS biopsy?

S. NAIR, R. KIRBY, U. PATEL and C. CORBISHLEY
St Georges Hospital, London, UK

OBJECTIVE

To determine the frequency with which a preliminary negative prostate TRUS biopsy in patients with PSA above 10 end up having prostate cancer on repeat histology.

MATERIALS AND METHODS

Relevant data extracted from Electronic Patient Record system over study period from 1998–2002. Patients included had PSA above 10 and an initial biopsy which did not show any cancer. The patients were divided into 3 groups based on PSA – Group 1 PSA 10–14.9; Group 2 PSA 15–19.9; Group 3 PSA 20 and above.

RESULTS

Of the 602 biopsies reviewed, 190 were done for PSA above 10.

	Total number	Mean age (years)	Mean TRUS volumes (ml)	Number of repeat histology	Number with carcinoma on repeat histology
Group 1	96	68	73	32 (33%)	5 (16%)
Group 2	49	70	92	16 (32%)	3 (19%)
Group 3	45	68	91	19 (37%)	7 (37%)

Of the 15 patients who had carcinoma on repeat biopsies, only 2 had a Gleason score below 6.

CONCLUSIONS

Repeat histology for patients with high PSA are recommended despite an initial negative biopsy. This assumes particular importance in patients with PSA above 20. TRUS volume alone does not always account for the high PSA value especially when the PSA is above 20.

FUNDING

Swire Foundation

P69

Outcomes of patients with PSA above 20 ng/ml and benign prostatic biopsy: indications for rebiopsy

C.M. JONES, N. SHAIDA and P.R. MALONE
Royal Berkshire and Battle NHS Trust, Reading, UK

INTRODUCTION

Patients with high PSA but benign biopsy pose a clinical dilemma.

PATIENTS AND METHODS

We reviewed our database of 2396 TRUS guided biopsies done between 1997 and 2002. PSA, PSA density (PSAD), PSA velocity (PSAV), volume, age and DRE were analysed in relation to cancer status.

RESULTS

388 (16%) patients had PSA above 20 ng/ml, including 99 (26%) with benign biopsies. PSA normalised in 15 and rebiopsy was contraindicated in 17. 67 were rebiopsied, including 19 (28%) with cancer on the first rebiopsy, and 4 on further biopsies. 1 had hormone therapy empirically, and 43 (64%) continued PSA monitoring without evidence of malignancy. PSAD, DRE and volume significantly differed between rebiopsied patients with and without cancer ($P < 0.05$). No other variables were correlative or predictive of cancer. Receiver operating characteristic analysis gave area under the curve of 0.76 for PSAD cancer prediction. PSAV above 0.75 ng/ml/year had 71% sensitivity and 74% specificity. Negative predictive value of PSAD under 0.35 ng/ml/cm^3 was 88%, and normal DRE 83%.

CONCLUSION

All patients should be rebiopsied unless PSA normalises. Even with PSA above 20 ng/ml, cancer detection is low after 2 negative biopsies. Third biopsy is not recommended if PSAD is under 0.35 ng/ml/g or DRE is normal.

P70

Usefulness of bone scan in prostate cancer – can we do without it?

D. DAWAM, S. MASOOD, C. KOURIEFS, P. RYAN, M.K.M. SHERIFF and G.R. MUFTI
Medway Maritime Hospital, Gillingham, Kent, UK

This abstract has been withdrawn by the authors.

Wednesday 29 June 11.00–12.00
Basic Science: Bladder Oncology
Chairmen: L. Griffiths and D. Kelly

P71

Genome-wide profiling of DNA copy number changes in bladder tumour by array-based comparative genomic hybridisation

A. VEERAKUMARASIVAM, I.G. MILLS, K. ICHIMURA, V.P. COLLINS, D.E. NEAL and J.D. KELLY
Institute of Hutchison-MRC, Department of Oncology, Division of Histopathology, Department of Pathology, University of Cambridge, Cambridge, UK

INTRODUCTION

Several key candidate genes involved in urothelial cell carcinoma (UCC) progression have been identified using conventional comparative genomic hybridisation (CGH). We have now employed array-CGH to allow higher resolution analysis.

MATERIALS AND METHODS

A series of 70 freshly frozen UCCs and 9 urothelial cancer cell lines were included in this study. DNA was extracted and human genome 1 Mb arrays were used.

RESULTS

Cell line data validated the technique by mirroring published copy number changes. The tumour profiles revealed new regions of copy number changes containing candidate oncogenes and tumour suppressors, as well as previously reported changes.

CONCLUSION

Array-CGH technology allows the identification of common genomic deletions or amplifications at a higher resolution and uncovering of single copy number changes in an aneuploid genetic background.

P72

Comparing gene promoter methylation frequencies in urine from patients with bladder cancer with urine from non-cancerous young and elderly control patients

D.R. YATES, J.W.F. CATTO, I. REHMAN, M. MEUTH, S. CROSS and F.C. HAMDY
Institute for Cancer Studies, Royal Hallamshire Hospital, Sheffield, UK

INTRODUCTION

Promoter hypermethylation is a mechanism for silencing tumour suppressor genes in transitional cell carcinoma (TCC), which has also been reported in normal ageing cells. Whilst investigators have identified methylation patterns that are age and tumour specific, few studies have investigated young patients. Here, we compare aberrant methylation in urine samples from young and

elderly patients with samples from TCC patients.

PATIENTS/METHODS

Fresh urine samples were obtained from non-cancerous young (age < 40 years, $n = 34$)/elderly (age > 70 years, $n = 31$) and from TCC ($n = 38$) patients. Methylational analysis for 7 gene promoters (APC, p16, p14, E-cad, GSTP1, RASSF1A, RARB2) was performed using quantitative real time PCR.

RESULTS

Hypermethylation was frequently detected in all three groups of samples. The highest rates were seen in urine from TCC patients at RASSF1A (53%), E-cadherin (34%) and APC (37%). Whilst similar rates were present in the elderly non-malignant urine samples [E-cadherin (58%), RASSF1A (48%) and APC (26%)], significantly less methylation was present in the young patient's urine [E-cadherin (29%), RASSF1A (26%) and APC (12%)] (chi-squared $P < 0.05$)

CONCLUSION

Significant levels of DNA methylation are found in urine from non-cancerous patients. The frequency of promoter methylation increases with age and malignancy.

FUNDING

British Urology Foundation Scholarship

P73

Fos-related antigen-1 (FRA-1) in muscle-invasive bladder cancer

R.F.J. STANFORD, R.E. EDWARDS, S. JAIN, E. TULCHINSKY, P. GREAVES and J.K. MELLON
University of Leicester, Leicester, UK

INTRODUCTION

FRA-1 contributes to the Activator Protein-1 (AP-1) transcription factor which is downstream in the Epidermal Growth Factor Receptor – Mitogen Activated Protein Kinase (MAPK) pathway. AP-1 regulates genes associated with motility, invasion and angiogenesis. In colon, thyroid and breast cancer, FRA-1 becomes the predominant AP-1 Fos component, but studies of FRA-1 in bladder cancer are lacking. We assessed expression, immunolocalisation and stability of FRA-1 in human bladder cancer.

MATERIALS AND METHODS

HT1376, J82, RT4, RT112, T24 and UMUC3 cells were assessed for FRA-1 by Western analysis. Immunolocalisation was studied by transfection with wild-type FRA-1; stability was studied by transfection using FRA-1 with a C-terminal deletion. Additionally, 104 invasive bladder tumours were assessed using immunohistochemistry.

RESULTS

J82, T24 and UMUC3 demonstrated endogenous FRA-1. Immunocytostaining detected nuclear FRA-1 but also unexpected cytoplasmic FRA-1. C-terminal deletion led to markedly increased FRA-1, implicating the C-terminus in FRA-1 stability. 60/104 tumours were FRA-1 positive, with unexpected cytoplasmic staining in 4 tumours.

CONCLUSION

FRA-1 is frequently detected in bladder tumours where it may contribute to invasion. Cytoplasmic FRA-1 suggests an alternative, unidentified role for FRA-1. We are continuing to investigate FRA-1 as a marker of MAPK pathway inhibition by novel drugs such as tyrosine kinase inhibitors.

P74

Dual ErbB1/ErbB2 tyrosine kinase inhibition – a potential adjunct to systemic chemotherapy in bladder cancer

L.A. McHUGH, T.R.L. GRIFFITHS, M. KRIAJEVSKA and J.K. MELLON
Urology Group, Department of Cancer Studies and Molecular Medicine, University of Leicester, Leicester, UK

INTRODUCTION

Of the 4 ErbB receptors, ErbB1 and ErbB2 are now therapeutic targets following the development of drugs such as Iressa and Herceptin. ErbB1, 2 and 3 are expressed by approximately 70%, 45% and 55% of bladder cancers. ErbB3 lacks tyrosine kinase activity but can dimerise with ErbB1 and ErbB2 allowing ErbB3 ligands e.g. heregulins (HRGs) to activate signal transduction. We assessed ligand- and chemotherapy-induced ErbB activation in bladder cancer cells and the extent of inhibition by GW572016.

METHODS

RT112 and J82 cells were treated with epidermal growth factor (EGF), HRG, or combined cisplatin/gemcitabine/paclitaxel, with or without GW572016. Phosphorylated (activated) and non-phosphorylated ErbB1, 2, 3, mitogen-activated protein kinase (MAPK) and Akt were determined using Western blot.

RESULTS

Treatment with GW572016 inhibited (i) EGF-induced activation of ErbB1-2, MAPK and

Akt, (ii) HRG-induced activation of ErbB1-3, MAPK and Akt, (iii) chemotherapy-induced activation of ErbB1, ErbB3 and Akt, but not MAPK.

CONCLUSIONS

Chemotherapy activates ErbB receptors in bladder cancer cells. Signal transduction associated with ErbB1, 2 and 3 can be blocked by the ErbB1/2 inhibitor, GW572016. Treatment regimens incorporating agents such as GW572016 are worth exploring further. GW572016 (lapatinib) is a product of GlaxoSmithKline

P75

Down regulating Delta-4 (DLL4) using RNA interference – a potential future treatment for bladder cancer

N.S. PATEL, M. DOBBY, J. LI, M.A. ROCHESTER, D.W. CRANSTON and A.L. HARRIS
Weatherall Institute of Molecular Medicine/John Radcliffe Hospital, Oxford, UK

INTRODUCTION

Bladder cancer growth and progression are partly dependant upon angiogenesis. To date the success of anti-angiogenic therapies in bladder cancer have been limited. In this work we have studied the role of the novel angiogenic target DLL4 in bladder cancer.

METHOD

Quantitative real-time PCR was used to assess the expression of DLL4 in 10 normal bladders and 60 bladder tumours. In-situ hybridization was used to study the pattern of DLL4 expression in 10 normal bladders/ureters and 24 bladder tumours. A number of *in-vitro* angiogenesis assays were used to study the biological effects in endothelial cells of silencing DLL4 expression using RNA interference.

RESULTS

DLL4 expression is upregulated in bladder tumours compared to normal bladder tissue. In-situ hybridization has shown that DLL4 expression is confined only to tumour vasculature. High expression of DLL4 in superficial bladder cancer is associated with a higher risk of recurrence, whilst high expression in invasive bladder cancer is associated with an increased risk of cancer death. Down regulating DLL4 using RNA interference significantly inhibits endothelial cell proliferation and migration.

CONCLUSION

DLL4 plays an important role in bladder cancer angiogenesis. Down regulating DLL4 using RNA interference is a potential future anti-angiogenic therapy for bladder cancer.

FUNDING

British Urological Foundation

P76

Aberrant promoter methylation in pre-malignant and invasive tumours of the urinary bladder

D. YATES, D. DHAWAN, J. PATTERSON, M. MEUTH, F.C. HAMDY and J.W.F. CATTO
Academic Urology Unit, Royal Hallamshire Hospital, Sheffield, UK

Transitional cell carcinoma (TCC) is characterised by frequent gene silencing by promoter methylation. Higher methylation frequencies occur in invasive and poorly-differentiated tumours, than superficial well-differentiated ones. It is accepted that invasive tumours arise from of carcinoma in situ. Here we investigate the timing of aberrant methylation in corresponding normal urothelium, carcinoma in situ (CIS) and invasive tumors from patients with both CIS and TCC.

METHODS

We obtained combinations of normal urothelium, CIS and TCC from 104 patients, and 15 benign controls. Using semi-quantitative real time PCR we analysed methylation in 5 genes (p16, p14, E-cadherin, GSTP1 & RASSF1a).

RESULTS

For all genes, higher frequencies and concentrations of promoter methylation were seen in TCC, when compared to CIS and normal urothelium (chi-squared. $P < 0.05$). Furthermore, increased methylation was present in CIS than in normal urothelium, and the normal urothelium from patients with cancer had higher levels of methylation than from benign controls (chi-squared $P < 0.05$). For example, the methylation frequencies at E cadherin were 20% (benign controls), 48% normal cancer patient urothelium, 62.5% CIS and 83% in TCC (chi-squared $P = 0.0001$).

CONCLUSION

Aberrant tumour suppressor gene methylation occurs early in the invasive TCC pathway and increases with tumour development and progression.

FUNDING

Medical Research Council, British Urological Foundation

P77

DNA repair gene XPC polymorphisms, smoking, occupational exposures and the risk of bladder transitional cell carcinoma

S.C. SAK, J.H. BARRETT, A.B. PAUL, D.T. BISHOP and A.E. KILTIE
Cancer Research UK Clinical Centre, St. James's University Hospital, Leeds, UK

INTRODUCTION

The xeroderma pigmentosum group C (XPC) protein is essential for repair of bulky DNA adducts. XPC gene polymorphisms may lead to altered DNA repair capacity and hence inherited susceptibility to cancer. We conducted a large case-control study into XPC polymorphisms and bladder transitional cell carcinoma (TCC) risk.

METHODS

22 XPC polymorphisms were genotyped on 547 cases and 579 controls using fluorescent-labelled PCR and allele discrimination Taqman techniques. The odds ratios (OR) and 95% confidence intervals (CI) were calculated using logistic regression and adjusted for age, sex, smoking and occupation.

RESULTS

Lys939Gln was in strong linkage disequilibrium (LD) with poly (AT) and IVS11-6 as shown previously. None of these was associated with increased TCC risk. However, Ala499Val was in LD with two 3'UTR polymorphisms (EX16-177 and EX16-184). Individuals carrying the homozygous variants of Ala499Val, EX16-177 and EX16-184 had increased TCC risk compared to homozygous wildtype genotypes [OR (95% CI): 1.61 (1.03–2.53), 1.82 (1.12–2.97), 1.83 (1.12–2.96) respectively]. Smokers carrying the homozygote variant for Ala499Val had a three-fold increased risk of TCC compared to non-smokers with homozygote wildtype genotype [3.16 (1.78–5.62)].

CONCLUSIONS

Ala499Val is in linkage disequilibrium with EX16-177 and EX16-184 in the XPC gene and all three polymorphisms are associated with increased risk of bladder TCC.

FUNDING

Yorkshire Cancer Research and Cancer Research UK

P78

Tissue engineered human pericardium: a potential decellularised matrix for bladder wall augmentation

S. MIRSADRAEE, H.E. WILCOX, S.A. KOROSSIS, J.N. KEARNEY, J. FISHER and E. INGHAM
Institute of Biological and Medical Engineering, University of Leeds, Leads, UK and National Blood Service Tissue Services, Sheffield, UK

This abstract has been withdrawn by the authors.

P79

Matrix metalloproteinase expression and function in urothelial carcinoma

M.J. WALLARD*, I.G. MILLS*, D.R. EDWARDS†, D.E. NEAL*, G. MURPHY* and J.D. KELLY*
**Department of Oncology, University of Cambridge, Cambridge, UK, and †School of Biological Sciences, University of East Anglia, Norwich, UK*

The matrix metalloproteinases (MMPs) are a family of 24 endopeptidases with a broad spectrum of degradative activity against the extracellular matrix which are over-expressed in a number of malignant processes. This study aimed to localise key MMPs in urothelial carcinoma and to determine their functional significance. Expression of eight MMPs was determined in tumour urothelial and stromal compartments using laser capture microdissection and quantitative

RT-PCR techniques. MMP activity in cell lines was inhibited using endogenous MMP inhibitors (TIMPs), the pan-MMP inhibitor Batimastat, and siRNA techniques to specifically target highly expressed MMPs. MMP inhibition was assessed *in vitro* by Matrigel™ invasion, wound healing and aggregation assays. MMPs 2, 11, 14, 15 and TIMP-2 were located primarily within the stromal compartment and MMP-13 within the epithelial compartment. MT1-MMP was particularly highly expressed in tumour tissues and in high grade cell lines. All cell lines demonstrated varying MMP expression and ability to invade and migrate; endogenous TIMPs and Batimastat significantly reduced the invasive capacity of HT1376 and EJ28. MMPs are predominantly located in the host stromal compartment of developing tumours. We demonstrate that inhibition of MMP activity has functional significance *in vitro*. Targeting specific MMP activity may represent a therapeutic strategy.

FUNDING

Addenbrookes NHS Trust, CRUK, BUF, Royal College of Surgeons of England

P80

An IL–10 promoter polymorphism may influence tumour development in renal cell carcinoma

E.G. HAVRANEK, W.M. HOWELL, H.M. FUSSELL, C.J.A. ANDERSON, M.A. WHELAN and H.P. PANDHA
St. George's Hospital, London, UK

INTRODUCTION

Interleukin 10 (IL-10) is an important immunoregulatory cytokine that is involved in many aspects of the immune response. Polymorphisms in the promoter of the IL-10 gene may influence tumour development by altering the levels of IL-10 present in the serum or tumour microenvironment.

PATIENTS AND METHODS

Renal cell carcinoma (RCC) patients (166) and controls (161) were genotyped for the IL-10–1082 single nucleotide polymorphism using real-time PCR in order to identify a possible link between IL-10 promoter polymorphisms and the development of RCC.

RESULTS

Patient control comparisons identified the AA genotype to be significantly greater in renal cell carcinoma patients (44% compared with 30%; $P < 0.05$). This result is in accordance with previous studies in prostate cancer. Previous studies have shown the AA phenotype to be associated with low levels of IL-10. However in this study an evaluation of IL-10 protein expression in peripheral blood lymphocytes (PBLs) from 32 renal cancer patients found no statistical difference in IL-10 expression between the genotypes, GG, AA or AG.

CONCLUSIONS

The IL-10 genotype may therefore influence the predisposition to several solid tumours. Possible mechanisms include low levels of IL-10 downregulating VEGF synthesis, inhibiting angiogenesis or by downregulating MHC class I expression.

Wednesday 29 June 14.30–15.30 Bladder Dysfunction and Incontinence Chairmen: L. Stewart and A. Thorpe

P81

Qualifying urgency and urge incontinence to measure the disease experience: our experience with 1861 patients

M. GHEI and J. MALONE-LEE
Whittington Hospital, London, UK

INTRODUCTION

There has been a recent interest in measuring the symptoms of urinary urgency in order to compare treatments. A novel approach would be to identify the circumstances in which symptoms occur and exploring the data to see if such contexts are associated with a gradation.

PATIENTS AND METHODS

We collected data from 5423 consultations on 1861 patients being assessed because of lower urinary tract symptoms and recorded their reported frequencies and incontinence episodes. Using ranked ordinal scales 'None, Mild, Moderate, Severe' we asked them about their symptoms on waking and rising, on hearing running water, on arriving home ('latchkey'), on cold weather and when feeling tired or worried. We also asked them to grade their urgency and urge incontinence.

RESULTS

The context symptoms showed striking associations with frequency and incontinence, progressing with increased severity. The least experience of disease was associated with waking rising and latchkey symptoms. Then followed symptoms precipitated by running water and cold weather. Aggravation by fatigue or worry was associated with the greatest disease severity. (ANOVA $F = 8.9$, $P < 0.001$)

CONCLUSIONS

Qualifying the experience of urgency and urge incontinence, seems to offer a promising new method for measuring the severity of urgency and urge incontinence.

P82

Is the bladder a 'reliable witness' in predicting urodynamic detrusor overactivity?

H. HASHIM and P. ABRAMS
Bristol Urological Institute, Bristol, UK

INTRODUCTION

Symptoms of overactive bladder syndrome (OAB) are suggestive of detrusor overactivity (DO). Based on clinical experiences, the aim of this study is to define how well symptoms of OAB syndrome can predict urodynamic DO.

PATIENTS AND METHODS

Adults, attending for urodynamics, with at least one symptom of OAB [urgency (U); urinary urge incontinence (UUI); frequency (F)], from February 2002 to February 2004, were included in the study. We then looked to see if these patients had DO or not.

RESULTS

1809 were identified. 1452 (80%) of those had complete storage symptom data entries. Of the 1452 patients, 1074 had symptoms of OAB and 378 had no symptoms of OAB. 63% of men and 32% of women with urgency alone had DO while 92% of men and 58% of women with urgency and urge urinary incontinence had DO. Frequency alone is a relatively good predictor of DO in men (62%) but poor in women (32%).

CONCLUSION

The definition of OAB is the best we have at the present time in predicting patients with DO. It is a better predictor in men than in women. This difference is mainly due to the presence of stress incontinence and sphincter weakness in women.

P83

The role of ambulatory urodynamic monitoring in the assessment of patients with incontinence

C.K. HARDING, T.J. DORKIN, A.S. LEONARD and A.C. THORPE
Department of Urology, Freeman Hospital, Newcastle upon Tyne, UK

INTRODUCTION

The symptom of urgency has a strong correlation with AUM findings and greater reliance on symptomatic diagnosis has been suggested (Radley et al. J Urol. 2001; 166: 2253). The aim of the current study was to assess the association of the symptom of urinary incontinence with findings from both conventional CMG and AUM.

MATERIALS AND METHODS

128 patients reporting urinary incontinence referred for AUM from Dec 2000–Dec 2003 were analysed. Further categorization was based on symptoms; *group one* stress leak, *group two* urge incontinence and *group three* mixed symptoms. Correlation of symptoms and urodynamic findings was assessed for both CMG and AUM.

RESULTS

Positive AUM findings followed normal CMG in 31/46 (67%). 82/128 (64%) patients exhibited DO on AUM compared to 32/128 (25%) at CMG. Symptomatic urge leakage was demonstrated urodynamically in 13/34 (38%) at CMG and 28/34 (82%) on AUM. Stress leakage was confirmed in 15/31(48%) cases at CMG and 12/31 (39%) on AUM.

CONCLUSIONS

AUM appears more sensitive than CMG for detecting DO and UUI. There is no increased diagnostic yield using AUM in those complaining of stress leakage. We would recommend AUM in those reporting urge incontinence but question its value in those reporting stress leakage.

Table 1: Urodynamic findings of both conventional and ambulatory urodynamics in patients complaining of urinary incontinence

	Group one Stress leak ($n = 31$)		Group two Urge leak ($n = 34$)		Group three Mixed symptoms ($n = 63$)		Total ($n = 128$)	
Urodynamic findings	CMG	AUM	CMG	AUM	CMG	AUM	CMG	AUM
USI	14	10	0	0	33	9	47	19
UUI	1	10	13	28	15	37	29	75
Mixed incontinence	1	2	0	0	3	5	4	7
BOO	1	0	1	2	0	0	2	2
Normal	14	9	20	4	12	12	46	25

P84

Sacral neuromodulation for women with urinary retention: long term results for the first 30 patients

R.B.C. KAVIA, V. MISHRA, R. DASGUPTA, S. ELNEIL and C.J. FOWLER
National Hospital of Neurology and Neurosurgery, London, UK

INTRODUCTION

Sacral neuromodulation is the only treatment that has been shown to restore voiding in young women with urinary retention (Fowler's syndrome). Results of neuromodulation have only been described in this group up to a mean of 37 months. We present extended follow-up results from one tertiary referral centre.

METHODS

The case notes of the women implanted with a sacral nerve stimulator for urinary retention were reviewed. The success, length of follow-up, side-effects and revision operations were noted.

RESULTS

Of 30 women (mean age at implantation 33.7 years), with mean length of follow-up 60 months (24–99 months), 29 voided post-operatively. Nineteen patients (63%) are currently voiding spontaneously. 11/30 women have had, or await stimulator or lead removal, for complications (including non-function, leg pain, back pain, box pain, leg weakness/paraesthesia, UTI or wound infection); seven of these await new staged implantation. Twenty-three women underwent revision operations (See Table).

Procedure	Number
Box repositioning	10
Lead Revision	19
Full System Revision	9
Total	38

CONCLUSION

Although, resource utilisation for neuromodulation is high, over 63% of patients, who otherwise face long-term self-catheterisation, continue to void spontaneously. Complications and revision procedures may be reduced with longer test stimulation with the two-staged implant procedure.

P85

International multi-center study evaluating the Adjustable Continence Therapy (ProACT™) for male post prostatectomy stress urinary incontinence–mid-term results

P.J. GILLING, W.A. HUBNER, F. TRIGO ROCHA, E. KOCJANCIC, P. PALMA and O.M. SCHLARP
Tauranga Hospital, Tauranga, New Zealand

INTRODUCTION

The Adjustable Continence Therapy (ProACT™) involves paraurethral insertion of two percutaneously adjustable balloons.

PATIENTS AND METHODS

203 patients in seven international centres have been evaluated from baseline to 24 months. Incontinence Quality of Life scores (IQoL) and changes in daily pad usage were the measurements used to assess efficacy. These were repeated at 6, 12 and 24 months. Complications and revision rates were also noted.

RESULT

IQoL improved from 42.2 (range 11.3–95.5) at baseline ($n = 203$) to 66.7 (range 13.6–100) at 6 months ($n = 157$) and 72 (range 11.3–100) at 12 months ($n = 125$) and 70.7 (range 10.2–95.5) at 24 months ($n = 49$). Pad usage was reduced from a mean of 4.3 at baseline ($n = 199$) to 1.8 at 6 months ($n = 163$); 1.5 at 12 months ($n = 123$) and 1.6 at 24 months ($n = 52$) with 63% patients dry based on 0–1 pad per day at 2 years. Balloon adjustments were performed as required. Balloon volume was occasionally reduced where necessary. Revision surgery was required in 36/172 patients (20.9%) as a result of erosion; migration or non response to initial surgery.

CONCLUSION

ProACT is a safe, effective and durable treatment for post prostatectomy incontinence.

FUNDING

Uromedica

P86

Australasian multi-center study to evaluate the safety and efficacy of the SPARC sling procedure for female stress urinary incontinence: results at one year

P.J. GILLING, C. BENNESS and C. MAXWELL
Tauranga Hospital, Tauranga, New Zealand

INTRODUCTION

This study was initiated to establish the safety and efficacy of the SPARC (Supra-pubic arc) synthetic sling system.

PATIENTS AND METHODS

Baseline assessments included urodynamics, 24 hour pad test, Kings Heath Questionnaire, repeated at 3 months and 12 months. Adverse events were recorded.

RESULT

60 patients (mean age 50 years) were enrolled. Mean operative time was 25 min (6–50 min) with a mean blood loss of 48 ml (5–400 ml). The 24-hour pad test reduced from 56.78 g at baseline to 4.0 g at 12 months. Pad usage reduced from 2.42 (range 1–10) per day to 0.38 (range 0–2) at 12 months. Quality of Life score reduced from 68.43 at baseline to 38.73 at 12 months. No serious adverse events were reported, but minor events included 2 (3%) bladder perforations, bleeding not requiring transfusion in 2 patients (3%), transient bladder or vaginal pain in 13.3%, urinary tract infection in 8% with one urethrolysis

being necessary. 17/60 patients (28%) had occasional denovo urge at 3 months; 5 (8%) patients have recurrent SUI. At 12 months 66% felt their incontinence had resolved and the remainder felt substantially better.

CONCLUSION

The implantation of the SPARC Sling procedure produces satisfactory early results, with few serious adverse events.

FUNDING

AMS

P87

A randomised controlled equivalence trial of minimally invasive sling surgery for the treatment of genuine stress incontinence (GSI): suprapubic urethral support sling (SPARC) and tension-free vaginal tape (TVT)

H.E. LORD, J.D. TAYLOR, N. TSOKOS, J.T. JEFFERY, J.C. FINN and S.F. EVANS
King Edward Memorial Hospital, Perth, Western Australia

ABSTRACT WITHDRAWN

P88

Porcine dermis (Pelvicol TM) vs. rectus fascia pubovaginal sling in the treatment of stress incontinence: outcome analysis and patient satisfaction at 3-year minimum follow up

S.K. GIRI, M.F. SHAIKH, P. MC KENNA, O. MABADEJE, G. NARASIMHULU and H.D. FLOOD
Mid-Western Regional Hospital, Limerick, Ireland

INTRODUCTION

Porcine dermis (Pelvicol TM)(PD) may be an attractive sling material providing less pain and a shorter operation time. We compared the 3-year effectiveness and patient satisfaction of the rectus fascia (RF) sling with that of the PD sling in the treatment of stress urinary incontinence (SUI).

METHODS

Between July 2000 and December 2001, 101 patients with SUI were randomly assigned to either RF ($n = 50$) or PD sling ($n = 51$). Patients with minimum follow-up of 3 years were included in this study. Patients were evaluated with a validated postoperative quality of life questionnaire by a blinded assessor. Primary outcome measures included continence rate and patient satisfaction on a visual analogue scale (0 = not satisfied, 10 = completely satisfied).

RESULTS

Complete data were available on 94 women (48 with PD and 46 with RF sling). The groups were well matched for age, type of SUI and urge symptoms. Overall, SUI was cured or significantly improved in 37 (80.4%) patients after RF and only 26 (54%) patients after PD sling. Mean patient satisfaction was significantly lower after PD sling (5.15 vs. 7.17 for RF, $P = 0.001$).

CONCLUSIONS

PD compromises longer-term efficacy of pubovaginal sling in the surgical treatment of SUI when compared with the autologous RF.

P89

Early haematoma formation and changes in pelvic anatomy following xenograft or tape sling: a prospective MRI-based study

S.K. GIRI, F. WALLIS, M.F. SHAIKH, O. MABADEJE, J. DRUMM and H.D. FLOOD
Mid-Western Regional Hospital, Limerick, Ireland

PURPOSE

To compare and contrast early pelvic haematoma formation and anatomical changes detected by MRI in patients undergoing proximal-urethral xenograft sling (XS) or the midurethral tension-free vaginal tape (TVT) procedure.

MATERIALS AND METHODS

Between October 2003 and March 2004, 24 consecutive patients with stress urinary incontinence were recruited prospectively. Of these, 12 had XS and 12 had TVT. All patients underwent pelvic MRI 8 hours postoperatively. Our primary outcome measures were characterization of retropubic haematoma and pelvic anatomical alterations.

RESULTS

Overall, six (25%) patients developed a retropubic haematoma. Patients with large haematomas and the entire XS group took longer to void (median 14.5 v. 6.0 h, $P = 0.048$ and median 7.5 v. 5.0 h, $P = 0.043$, respectively). The mean distance between the bladder neck and the pubococcygeal line was significantly higher in the XS group (20.00 mm for XS vs. 15.83 mm for TVT, $P = 0.04$). Patients were more likely to have a closed bladder neck after XS (10/12) than after TVT (6/12).

CONCLUSIONS

This study suggests that subclinical retropubic haematomas are common after sling procedures. Also MRI can reliably detect anatomical soft tissue alterations consistent with the different anti-incontinent mechanisms of the standard sling and the TVT.

FUNDING

Pfizer Healthcare Ireland

P90

Predicting failure to void after TVT

N. HON, N.N.K. LYNN, U. OTITE, M. LANCASHIRE and C.D. RENNIE
Department of Urology, Alexandra Hospital, Redditch, UK

INTRODUCTION

Trans-vaginal tape (TVT) insertion is commonly used for patients with stress urinary incontinence. Some patients fail to void after the procedure. We looked at the use of pre-operative variables to see whether this could have been predicted.

PATIENTS AND METHODS

A series of 50 women with stress incontinence who underwent TVT insertion were studied. All had urodynamic studies before the procedure. Age, body weight, severity of stress incontinence, urodynamic parameters [bladder volume at first desire to void, maximum cystometric capacity, detrusor pressure at initial voiding phase, maximum flow rate (Qmax), maximum detrusor pressure at Qmax] were studied. Receiver operating characteristics curve (ROC) analysis was performed to determine the best predictor.

RESULTS

Mean age was 54.1 years (SD = 12.7). 12% of patients failed to void spontaneously post operatively. Areas under the curves for age, body weight, severity of stress incontinence, bladder volume at first desire to void, maximum cystometric capacity, detrusor pressure at initial voiding phase, maximum flow rate (Qmax), maximum detrusor pressure at Qmax were 0.11, 0.33, 0.4, 0.2, 0.78, 0.72, 0.1 and 0.78 respectively.

CONCLUSION

Maximum cystometric capacity, detrusor pressure at initial voiding phase and Qmax were the best predictors which could indicate failure to void after TVT insertion.

Wednesday 29 June 16.00–17.00
BPH
Chairmen: J. Hindmarsh and M. Speakman

P91

A prospective randomised double blind controlled trial investigating the effect of alfuzosin on post-operative urinary retention and urinary tract infection following major joint replacement

N.H.Y. HON, S. GHIBLAWI, S. KILI, R. INMAN, P.W. JONES and S.W.V. COPPINGER
The Shrewsbury and Telford Hospital NHS Trust, Shropshire, UK

INTRODUCTION

Urinary complications are common following arthroplasty. Haematogenous spread of uropathogens to prostheses is potentially disastrous. This is the first trial investigating effects of alpha-blockers on urinary retention and infection (UTI) rates in men and women undergoing major arthroplasty.

PATIENTS AND METHODS

240 patients undergoing arthroplasty were randomised to alfuzosin 5 mg BD or placebo for 5 days perioperatively. Preoperative IPSS and QoL scores were recorded. MSU's were collected preoperatively, on days 4 and 7, and if catheterised. Outcomes were total catheterisations and UTIs (bacterial count >105/ml). Data was analysed using chi-square test.

RESULTS

There was no significant difference in overall retention rates between treatment groups (24.3% alfuzosin vs. 33.9% placebo). There was no apparent effect in women but a reduction in retention rates in men on alfuzosin trended towards significance ($P = 0.08$). IPSS or QoL did not predict retention. Women had more UTIs postoperatively ($P = 0.002$). No differences between the UTI rates in catheterised vs. non-catheterised patients or treatment arm was found.

CONCLUSION

We found no beneficial use for alfuzosin to prevent urinary complications in women following arthroplasty. Perioperative alpha-blockers may have a role for preventing urinary complications in men following major arthroplasty but larger study numbers in men are needed to confirm this hypothesis.

FUNDING

sanofi-synthelabo

P92

Assessing risk of urinary retention after major joint surgery using the International Prostate Symptom Score

N. RUKIN, D.A. ASHDOWN, M. KHANBAI, P. PATEL and S. LIU
Department of Urology, University Hospital of North Staffordshire, Stoke-on-Trent, Staffordshire, UK

INTRODUCTION

Post-operative urinary retention following major joint replacement surgery is common, potentially preventable and a risk factor for joint replacement sepsis. Although its aetiology is multifactorial, we hypothesised preoperative LUTS to be a useful predictive factor.

PATIENTS AND METHODS

We prospectively studied 100 consecutive men undergoing major joint replacement. Patients completed a preoperative IPSS. Peri-operative data including anaesthetic type, body mass index and urinary function were recorded. Patients who developed post-operative urinary retention were followed up for 6 months to assess urinary outcome.

RESULT

One patient was catheterised pre-operatively and excluded. Post-operatively 60 patients (61%) developed acute retention requiring catheterisation. 55 (92%) of these patients passed their first trial without catheter (TWOC), 4 (7%) required a second TWOC and one a long term urinary catheter. No significant difference in age between the retention and non-retention groups was found ($P = 0.486$), however there was a difference in IPSS ($P = 0.017$). An IPSS greater than 8 was associated with a significantly increased risk of post-operative urinary retention ($P = 0.048$).

CONCLUSION

IPSS is simple tool which could be used in orthopaedic pre-assessment clinics to help identify patients at risk of urinary retention after joint replacement surgery. Such patients may benefit from peri-operative alpha blockers.

P93

Clean Intermittent Self-Catheterisation in urinary retention; a practical alternative in men of all ages

I.B. DUNN, W. BROWN, W. WATTS, D. BARNES and P. SPROTT
Royal Newcastle Hospital, NSW, Australia

INTRODUCTION

Men with urinary retention are typically catheterised and admitted for education in catheter care. If a 'trial without catheter' fails, they remain catheterised until definitive treatment. An indwelling catheter can lead to discomfort, infection and increased complications at TURP. Clean Intermittent Self-Catheterisation (CISC) is an alternative for these patients.

PATIENTS AND METHODS

A Nurse-led CISC Clinic was implemented at our institution in 2000. Patients with uncomplicated urinary retention are catheterised in the Emergency Department and instructed to contact this Clinic, where they have catheter removal and education in CISC. Follow-up is by telephone. Of 300 men managed in this way, a sample of 100 was audited, with records obtained in 84.

RESULTS

Age range was 43–90 (median 70.5). 77/84 performed CISC independently, and 3 with the aid of a carer. Only 4 patients couldn't or wouldn't learn CISC. 28/80 continued until definitive treatment, and 36 returned to spontaneous voiding within 3 months. 5/80 continued long-term CISC, and 3/80 reverted to an indwelling catheter. 8 were proficient but subsequently managed elsewhere. There were 11 minor complications.

CONCLUSION

CISC is a practical and preferable alternative to an indwelling catheter in most men with urinary retention. Age alone is not a contraindication.

P94

The effect of therapy for BPH upon male sexual function

S.C. SAK, O. BALDO, P. TIRUKONDA and I. EARDLEY
Pyrah Department of Urology, St. James's University Hospital, Leeds, UK

OBJECTIVES

We previously reported the relationship between LUTS and sexual function in men presenting to a LUTS assessment clinic. This study assesses the effect of therapy on sexual function in these men.

MATERIAL AND METHODS

We have baseline data on all men. Patients received medical, surgical or observational therapy. Questionnaires including global assessment question and the Brief Sexual Function Inventory were mailed to all men.

RESULTS

315 men replied. Median follow-up was 39 months. All 3 groups had deterioration of erectile function (table). Both medical and surgical groups had deterioration of ejaculatory function over time, but the observation group did not. Surgery was more likely to be associated with an overall worsening of sexual function than observation ($P = 0.002$), but there was no statistical difference between medical therapy and observation ($P = 0.13$).

Groups	Baseline erectile score	Follow-up erectile score	*P*-value	Baseline ejaculatory score	Follow-up ejaculatory score	*P*-value
Observation ($n = 115$)	5.8	4.8	0.002	5.0	4.4	0.12
Surgical ($n = 59$)	5.2	3.9	0.001	4.5	3.1	0.01
Medical ($n = 117$)	4.2	3.7	0.04	4.2	3.5	0.005

CONCLUSIONS

All patients treated for LUTS have deteriorating erectile function regardless of the type of therapy. Surgical and medical therapy results in impaired ejaculatory function while observation does not.

P95

Drug treatments for BPH – bringing cost-effectiveness into the equation

C.L. FOLEY, J. CONSTANTINOU and R.S. KIRBY
Institute of Urology and Nephrology, Middlesex Hospital, UCL, London, UK

INTRODUCTION

BPH health expenditure is increasing annually as more men request treatment and choose life-long drug therapy over TURP. While the most commonly prescribed alpha-blockers are broadly similar in efficacy, prices vary greatly. We assessed the value for money of seven different BPH drug treatments.

METHODS

The AUA BPH guidelines and the British National Formulary provided effectiveness data and prices respectively. One-way and probabilistic sensitivity analyses modeled varying efficacy and doses.

RESULTS

The price of one IPSS point improvement/month varied from £3.83 to £25.71. An extra ml/second/month in maximum urinary flow rate cost between £6.04 and £44.85. Overall terazosin, doxazosin and finasteride/doxazosin therapies were most cost-effective. In sensitivity analyses, finasteride was rarely cost-effective. In no scenario did dutasteride, tamsulosin or alfuzosin offer the best value treatment.

DISCUSSION

Terazosin improves LUTS at the best price. Doxazosin and finasteride/doxazosin offer better results still, but at increasing expense. All are cost-effective. Choosing between them depends on the budget available. Non-uroselective alpha-blockers have prevailed here. Uro-selectivity comes at a high price, but only a costing of symptoms, side-effects and complications together would determine whether this extra expense is justified. Cost-effective practice is necessary, but not all BPH drugs offer the same value for money.

P96

Patient satisfaction following TURP: 11 year prospective follow-up study

S.F. MISHRIKI, J. ROYLE, A. MARTINDALE, C. ROXBURGH and N.P. COHEN
Aberdeen University Hospitals NHS Trust, Aberdeen, UK

INTRODUCTION

TURP remains the 'gold standard' surgical treatment for bladder outflow obstruction. Studies suggest that up to 25% of patients are dissatisfied due to persistence of symptoms. Adverse effects on potency have been suggested. This study analyses patients' satisfaction and perceived success of surgery.

PATIENTS AND METHODS

A prospective study of 280 consecutive men with LUTS had TURP. The average age was 68 years (49–88). Objective assessments included pre and post operative flow rates, quality of life, bother scores and sexual questionnaires. These were completed by the patients and their partners, pre operatively, at 6 months post-operatively and at 6 and 11 years.

RESULTS

At 6 months, only 9% of patients and at 6 years 18% were truly dissatisfied with the outcome of surgery. At 6 years, although some patients had residual symptoms the majority had marked improvements in flow rates and symptom scores. This improvement persisted for up to 11-year follow-up.

	Bother Patient	Quality Patient	Qmax
Pre-Op	15.39	7.92	10.2
n = 280			
6/12 FU	4.65	2.38	18.51
n = 166			
6 years FU	8.42	3.56	16.8
n = 107			
11 years FU	13.11	5.20	N/A
n = 63			

Mean bother and quality of life scores recorded by the patients fell.

Of 120 sexually active men, 73 completed full follow-up at 6 months. All (100%) were still sexually active following TURP. 17% with pre-existing sexual dysfunction

reported improved sexual activity at the 6 months follow-up. Of the 73 patients, 47 (mean age 64) completed the 6 years follow-up. Of these, 30 (64%) were still sexually active. At 11 years, 31% were still sexually active.

CONCLUSION

This long-term follow-up prospective study has shown that the majority of patients who had TURP experienced successful and satisfactory results with significant improvements in objective and subjective measures that were maintained long-term. Erectile difficulties frequently precede surgery. TURP does not have adverse effects on sexual function, and long-term potency is maintained.

P97

Stromal nodules and vessel wall proliferation in TURP specimens are associated with failure of medical therapy with alpha blockers

R.D. SMITH, M.-A. TRAN-DANG, B. KHOUBEHI, R. WITHEROW, A. PATEL and M.M. WALKER
Departments of Urology and Pathology, St. Mary's Hospital, Paddington, London, UK

INTRODUCTION

α-blockers appear to have a finite period of benefit before progression of BPH. We have found prominent stromal nodules and vessel wall thickening in TURP specimens from patients on these drugs and hypothesise that these are pathological indicators of failure of medical treatment.

PATIENTS AND METHODS

α-blocker treatment and retention status were obtained for 60 men with BPH confirmed at TURP. Number of stromal nodules per section and the presence of vessel wall thickening were recorded blinded to the clinical detail.

RESULTS

Patients on α-blockers had significantly more stromal nodules per section than untreated men ($P = 0.04$ Mann–Whitney U test). Vessel wall thickening was present in 33/35 men taking α-blockers and in 15/25 men who were not ($P = 0.01$, 2-tailed Fisher's Exact Test) and in 16/16 men who had acute urinary retention (AUR) on α-blockade compared with 8/22 men in retention who were not ($P < 0.0001$, Fisher's Exact test).

CONCLUSION

These data support the conclusion that stromal nodules and vessel wall thickening are pathological features of BPH significantly associated with α-blocker treatment. The prevalence of vessel wall thickening in men developing AUR on α-blockers suggests a possible mechanism for the failure of medical management in these patients.

P98

Prenyl transferase inhibition with AZD3409 for the treatment of benign prostatic hyperplasia *in vitro*

R. KHAFAGY, C. HART, T. STEPHENS, V. RAMANI, M. BROWN and N.W. CLARKE
GU Prompt Research Group, Paterson Institute, Christie Hospital NHS Trust, Withington, Manchester, UK, AstraZeneca UK, Alderley Park, Macclesfield, Cheshire, UK

INTRODUCTION

Benign prostate enlargement (BPH) is becoming a major health problem with a need for more pharmacological agents which can reduce symptoms in this population of men. AZD3409 is a novel prenyl transferase inhibitor which has potential anti-proliferative effects.

METHODS

The effect of escalating doses of AZD3409 was assayed on the proliferation of the PNT2-C2 prostate epithelial cell (PEC) line, primary human PEC and primary prostate fibroblasts. Primary samples were obtained from consenting patients undergoing TURP. Cells were seeded as a sub-confluent monolayer on tissue culture plastic, and counted 3 days post exposure using the CASY TT cell counter.

RESULTS

AZD3409 displayed marked anti-proliferative effects on PNT2-C2 cells (IC50 = 22.06 nM), primary human PEC and fibroblasts

(IC50 = 278.7 nM & 328.6 nM respectively) after 3 days exposure at concentration levels known to be attainable *in vivo*.

CONCLUSION

AZD3409 is a potent inhibitor the proliferation of the PNT2-C2 cell line with a significant reduction in the growth of primary human PECs and fibroblasts. Prenyl transferase inhibition using AZD3409 is a potentially significant therapeutic target for the management of BPH.

FUNDING

AstraZeneca, Alderley Park, Macclesfield, Cheshire, UK

P99

Bladder contractility index revisited

M. BELAL, C. BLAKE, C. HARDING, C. GRIFFTHS, M. DRINNAN, W. ROBSON, P. RAMSDEN, R. PICKARD and P. ABRAMS
Southmead Hospital, Bristol, UK

INTRODUCTION

Poor detrusor contractility has a negative effect on the outcome for TURP. The bladder contractility index (BCI) is pdet Qmax +5 Qmax, with a figure of <100 representing poor contractility. The flow rate multiplication factor (K) of 5 reflects the rise in detrusor pressure seen when isovolumetric conditions are imposed on the bladder (pdet.isv). Initial work validating a non-invasive method of estimation of pdet.isv suggested that this factor may be too high. We aim to re-calculate K.

METHODS

Data for analysis were obtained in 2 centres as part of a study validating non-invasive bladder pressure measurement. Following ethical approval and informed consent, subjects underwent a conventional pressure flow study (PFS) which included interruption of flow by automatic inflation of a penile cuff during voiding. The factor K was determined for each subject according to the following formula K = (pdet.isv – pdet.Qmax)/Qmax.

RESULTS

A total of 260 men with LUTS and a mean age of 66 years were recruited to the study of whom 240 provided complete data. The mean K value was 2.48 with a SD 2.59 (range 0–15).

CONCLUSION

BCI overestimates the measured isovolumetric detrusor pressure. The multiplication factor should be 2.5, not 5.

P100

The measurement of prostatic tissue mechanical characteristics: a novel approach to assessing benign prostatic disease

S. PHIPPS, T.H.J. YANG, F.K. HABIB, R.L. REUBEN and S.A. McNEILL
Prostate Research Group, Western General Hospital, Edinburgh, UK; School of Engineering and Physical Sciences (Mechanical Engineering), Heriot – Watt University, Edinburgh, UK; Department of Urology, Western General Hospital, Edinburgh, UK

INTRODUCTION

Prostatic tissue morphology is important in the pathophysiology of benign prostatic obstruction which is likely to be determined, at least partly, by prostatic tissue mechanical properties. We investigated the relationship between the morphology and the mechanical properties of benign prostatic tissues *in vitro*.

METHODS

TURP chippings were collected from 17 patients undergoing TURP for BPH. Using a novel method, the specimens underwent immediate mechanical testing. The amplitude ratio ($|E^*|$) between energy waves entering and arising from the specimen, a measure of elastic properties, was derived. Sections from the processed specimens underwent immunohistochemical staining and morphometric analysis. Correlations between the prostatic morphology and mechanical measurements were assessed with linear regression analysis.

RESULTS

There was a strong positive correlation between prostatic smooth muscle content

and |E*| ($R^2 = 0.58$, $P = 0.009$). This was stronger considering only TURP chippings composed of predominantly stromal tissue ($R^2 = 0.71$, $P = 0.001$).

CONCLUSIONS

We have shown that strong correlations exist between prostatic tissue morphology and mechanical characteristics. As the response of a BPH patient to alpha-blockers is related to the proportion of prostatic smooth muscle present, the ability to quantify prostatic tissue mechanical characteristics *in vivo* may be of clinical benefit in the future assessment and treatment of benign prostatic disease.

FUNDING

Engineering and Physical Sciences Research Council, UK

Thursday 30 June 09.30–10.30
Basic Science: Prostrate
Chairmen: F. Hamdy and I. McIntyre

P101

Naturally occurring dietary flavonoids cause profound cell cycle arrest, and alterations in cell cycle regulatory proteins in prostate cancer cells *in vitro*

A. HADDAD, V. VENKATESWARAN, L. VISWANATHAN, S. TEAHAN, N. FLESHNER and L. KLOTZ
Sunnybrook and Women's College Health Sciences Centre, Toronto, ON, Canada

INTRODUCTION

Flavonoids are a diverse group of dietary polyphenols with various biological properties. We have studied the effects of a representative subgroup of 30 flavonoids on prostate cancer cell lines *in vitro*.

METHODS

Flavonoids were tested on the prostate cancer cell lines (PC3 and LNCaP), the MCF-7 breast cancer and PSC prostate stromal lines. The effects on proliferation were determined using CyQuant cell proliferation assay. Flow cytometric analysis using bromodeoxyuridine-FITC and propidium iodide labeling was performed to assess cell cycle effect. Western blotting was performed to detect changes in cell cycle protein expression.

RESULTS

The flavonoids 2,2'-dihydroxychalcone (2,2'-DHC), fisetin, quercetin, isoliquiritigenin and luteolin had the greatest growth inhibition on LNCaP and PC3, with less effect on the non-prostate cancer cells. These flavonoids were found to cause G2/M arrest, with dramatic reduction in synthesis (S) phase cell numbers. Western blotting showed a reduction in cdk2 and cyclin A levels caused by 2,2'-DHC in LNCaP. In addition, levels of cyclin D1, D3, p21, p27 and p53 remained unaltered in 2,2'-DHC treated cells.

CONCLUSIONS

This is the first report of the anti-proliferative and cell cycle effects of the novel dietary flavonoids 2,2'-DHC and fisetin on prostate cancer cell lines.

FUNDING

Canadian Prostate Cancer Research Initiative Grant

P102

Defining the Prostate Cancer Stem Cell

J.D. SAMUEL, C.A. HART, P. GILMORE, M.D. BROWN and N.W. CLARKE
Genito-Urinary Cancer Research Group, Cancer Research UK Paterson Institute, Christie Hospital NHS Trust, Manchester, UK

INTRODUCTION

It is hypothesised that prostate cancer arises from an as yet elusive malignant prostate stem cell. We have previously demonstrated that the Hoechst 33342 dye efflux assay can be adapted to isolate a stem cell enriched side population (SP). Here we present further SP stem cell enrichment by fractionation based on $\alpha 2\beta 1$-integrin and CD133.

METHODS

Red/blue Hoechst 33342 FACS analysis of $\alpha 2\beta 1$-integrin+ve CD45-ve cells was used to isolate a side population, which was further fractionated based on CD133 status. CD133 ± fractions were phenotyped using a panel of stem cell and differentiation markers.

RESULT

The Hoechst dye efflux assay of $\alpha 2\beta 1$+veCD45-ve prostate cells generates an SP accounting for 1.89 ± 0.49% of the population. CD133 fractionation shows that the total CD133+ fraction constitutes 1.22 ± 0.65% of the $\alpha 2\beta 1$ population with 0.03 ± 0.01% of cells falling within the SP. Compared to the original SP, the $\alpha 2\beta 1$/CD133+ SP shows a highly enriched population with 57.5% vs. 10.5% expressing p21Waf1/Cip1, 52.2% vs. 30.0% cleaved Notch, 55.8% vs. 26.8% β-catenin, 33.9% vs. 3.8% Musashi-1.

CONCLUSION

We have adapted the Hoechst dye efflux assay to isolate a highly enriched $\alpha 2\beta 1$/CD133+ prostatic stem cell population. This will enable further genetic characterisation.

FUNDING

Urological Research Fund, Salford Royal Hospitals NHS Trust, UK

P103

Prostate epithelial cell differentiation is associated with alterations in apoptotic phenotype

R.M. LONG, C. MORRISSEY, H.J. HAMILTON, N. FARRELL, J.M. FITZPATRICK and R.W.G. WATSON
Department of Surgery, Mater Misericordiae University Hospital, Dublin, Ireland, Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, Ireland

INTRODUCTION

The Inhibitors of Apoptosis (IAPs) proteins have been shown to be expressed in prostate cancer cells and may be involved in survival during androgen ablation. Our objective is to investigate alterations in apoptotic phenotype of cells during differentiation from an apoptotic resistant basal cell to an apoptotic susceptible secretory cell.

MATERIALS AND METHODS

HPr-1 and HPr-1AR cells were cultured in tissue culture flasks and 3-D matrigel matrix, with and without DHT to drive differentiation. Flow cytometry was used to assess viability and apoptosis. Western blotting and RT-PCR were used to determine changes in differentiation markers as well as alterations in IAPs.

RESULT

Morphological changes as well as increased cytokeratin 18 and decreased cytokeratin 14 expression confirmed differentiation of cells. HPr-1AR cells remained undifferentiated in 3-D culture. Polarisation and lumen formation were demonstrated in HPr-1 cells by immunofluorescence. Differentiation resulted in a decrease in cIAP-1 and XIAP, while cIAP-2 remained unchanged. Apoptotic rates increased during differentiation.

CONCLUSION

The process of differentiation alters the apoptotic susceptibility of prostate epithelial cells that is associated with alterations in IAP expression. Incomplete differentiation either due to altered AR receptor status or extracellular matrix proteins may result in maintained IAP expression and resistance to apoptosis.

FUNDING

British Urological Foundation

P104

Neuropeptide Y expression is increased in the progression from benign to malignant prostate epithelium and predicts outcome after radical prostatectomy

K.K. RASIAH, J.G. KENCH, M. GARDINER-GARDEN, P. STRICKER, R.L. SUTHERLAND and S.M. HENSHALL
Garvan Institute of Medical Research, St Vincent's Hospital, Sydney, Australia

Elucidation of dysregulated gene expression patterns in premalignant lesions is critical in identifying genes that can be targeted to prevent prostate cancer (PC) development and progression. Using a gene discovery approach, we integrated laser capture microdissection (LCM), transcript profiling and tissue microarrays (TMAs) to identify novel markers of prognosis differentially expressed across the progression model of early PC. RNA from microdissected normal, HGPIN and PC cells were interrogated using Affymetrix U133A microarrays. A target gene, neuropeptide Y (NPY), was validated by immunohistochemistry in TMAs containing 1626 cores of benign, premalignant and PC tissue from 243 radical prostatectomy (RP) patients with 81 months median follow-up.

Expression profiles in HGPIN and normal cells identified 30 genes up-regulated significantly ($P < 0.05$) in HGPIN. The NPY gene demonstrated higher proportional immunostaining in HGPIN and PC compared to benign epithelium ($P < 0.0001$). Increasing NPY immunostaining of PC, as a categorical variable, was independently associated with relapse, after adjusting for traditional prognostic factors ($P = 0.0449$–0.0103). The expression patterns of NPY in HGPIN and its prognostic value after RP supports further evaluation of NPY as a marker in PC and a potential therapeutic target in preventive strategies against premalignant prostate disease.

FUNDING

Royal Australasian College of Surgeons, Urological Society of Australasia

P105

Exploring the expression of the androgen receptor (AR) in prostate cancer: Its relationship to the vascular endothelial growth factor (VEGF), hypoxia inducible factors (HIF) 1 and 2 and the novel forkhead transcription factor, FOXP1

J.L. BODDY, S. FOX, P. HURLEY, P.R. MALONE, A. BANHAM and A.L. HARRIS
The Harold Hopkins Department of Urology, The Royal Berkshire Hospital, Reading, UK; The Nuffield Department of Clinical Laboratory Sciences, John Radcliffe Hospital, Oxford, UK; The Cancer Research UK Molecular Oncology Laboratory, Weatherall Institute of Molecular Medicine, Oxford, UK

INTRODUCTION

Hypoxia and angiogenesis have been shown to play an important role in prostate cancer development. Angiogenesis is influenced by androgens and recent cell line studies suggest that this effect may be regulated, at least in part, by the hypoxia pathway. The current study explores this signalling pathway further and investigates the role of the potential tumour suppressor gene and nuclear receptor co-regulator, FOXP1.

MATERIALS AND METHODS

The expression of the AR, HIF-1α, HIF-2α, VEGF-A and FOXP1 were assessed using a tissue microarray comprising 149 radical prostatectomy specimens. Expression levels were compared with each other and standard clinico-pathological variables, including PSA recurrence.

RESULTS

The relationships between expression levels are presented in Table 1.

	HIF-1	HIF-2	VEGF	AR
FOXP1	0.01	0.000	0.007	0.000
AR	0.004	0.000	0.05	
VEGF	0.05	0.000		
HIF-2	0.02			

Despite PSA recurrence being significantly related to Gleason score ($P = 0.006$), capsular invasion ($P = 0.04$) and positive surgical margins ($P = 0.04$), the staining factors gave no additional prognostic information.

CONCLUSIONS

Although no prognostic markers were identified this study supports the hypothesis that androgens regulate VEGF levels through the activation of HIF in androgen-sensitive tumours. In addition it identifies the potential role of FOXP1 as a co-regulator of the androgen receptor.

P106

Inhibition of angiogenesis by prostasomes

G.H. DELVES, A. GOYAL, B.A. LWALEED and A.J. COOPER
School of Biomedical Science, University of Portsmouth, Portsmouth, UK

INTRODUCTION

Prostasomes are biologically active organelles that are secreted by human prostate epithelial cells, and it is believed that they have a role in prostatic disease, particularly adenocarcinoma. We studied the effect of prostasomes on the rat aortic ring model of angiogenesis, a key feature of tumour development.

MATERIALS AND METHODS

Prostasomes were prepared from pooled post-vasectomy semen samples. Rat aortic rings were harvested from 8 week old male

rats, and placed in Matrigel. Angiogenesis was quantified after 5 days by spectrophotometric assessment of cell viability. The effect of preparations of boiled prostasomes and artificially prepared liposomes was also assayed.

RESULTS

Prostasomes were demonstrated to significantly inhibit angiogenesis activity, with 25.4% less absorption on spectrophotometric assay. This figure underrepresents the reduction of neovessel formation, as the ring itself contains many cells. Significant, though lesser, inhibition was also seen with preparations of boiled prostasomes and liposomes.

CONCLUSION

This study demonstrates the *in vitro* inhibition of angiogenesis by prostasomes, contrary to previous speculation. The effectiveness of boiled prostasome preparations, in which protein has been denatured, suggests this inhibition is not protein dependant, similarly to other known prostasomal actions, in which transfer of lipid has been demonstrated to occur.

P107

Do CD142 carrying prostatic exosomes promote angiogenesis?

J.A. HICKS, W.M. ANDERSON, B.A. LWALEED, A.J. COOPER and S.A.V. HOLMES
St Mary's Hospital, Portmouth, UK

INTRODUCTION

CD142 is the primary initiator of coagulation. It is found in high concentration in lipid vesicles or exosomes in urine and in semen (in semen they have been called prostasomes). CD142 has been implicated is a marker for the angiogenic phenotype in breast cancer. It would seem pertinent to assess whether CD142 has its effects through exosomes.

METHODS

Human umbilical vein endothelial cells (HUVECs) were grown on matrigel in conditioned medium from prostate cancer cell lines. These mediums were centrifuged to yield exosomes and exosome free supernatant. HUVECs were then grown in exosome-enriched medium and their angiogenic affects compared with HUVECs grown in non-angiogenic conditions.

RESULTS

Exosomes can be demonstrated in prostatic secretions by electron microscopy. Centrifugation of semen shows that the prostasome rich fraction contains 1400 ng/ml of CD142 and this fraction is highly angiogenic when added to HUVEC cells *in vitro*.

SUMMARY

Exosomes derived from prostate cancer cell lines do promote angiogenesis *in-vitro*. These exosomes are rich in CD142, which may be acting as the angiogenic stimulus as previously suggested in breast cancer research.

P108

Differential expression of Wnt-induced secreted proteins (WISPs) in prostate tissues and cancer cell lines and their role in the action of HGF/SF induced *in vitro* invasion

A. HAWIZY, G. DAVIES, G.M. HARRISON, H. KYNASTON, M.D. MASON and W.G. JIANG
Metastasis and Angiogenesis Research Group; Wales College of Medicine, Cardiff University, UK

BACKGROUND

WISPs 1-3 are multicellular proteins belonging to the CNN family that regulates various cellular functions including proliferation, migration and adhesion. Our aim was to determine the role of WISP expression in human prostate tissues and cells.

METHODS

mRNA and protein levels were assessed by RT-PCR, Western blotting and immunohistochemistry. The effect of HGF/SF

a pro-invasion/metastasis cytokine was determined on *in vitro* invasion in WISP-2 knock out cells using a hammerhead ribozyme transgene.

RESULTS

WISPs 1-3 were strongly expressed in PC-3 cells at mRNA and proteins levels, with varying degrees of expression detected in a panel of prostate cell lines. WISP 1-2 staining was reduced in cancer tissues compared to normal tissues. There was no change in the level of WISP-3 staining between normal and tumour tissues. Ribozyme transgenes were used to knock out the expression of WISP-2 in DU-145 cells (DU-145WISP2+/+). HGF/SF increased the invasiveness (43.3 ± 1.80; $P < 0.05$ vs. control 35.5 ± 3.2) of DU-145WISP2+/+ cells through Matrigel.

CONCLUSIONS

The pattern of expression of WISPs 1-3 varied between normal and tumour tissues and cells. HGF/SF increased the invasion of DU-145WISP2+/+ cells suggesting that WISPs, particularly, WISP-2 may play a role in the control of invasiveness in prostate cancer.

P109

Inhibiting prostate cancer cell growth by the new technique of RNA interference on the emerging gene TSG101

N.C. BORLEY, G. ZHU, G. MUIR and I.H. HART
King's College and St Thomas' Hospitals, London, UK

INTRODUCTION

The gene TSG101 was originally defined a tumour suppressor gene, raising expectation that its absence should lead to increased tumour cell growth. There is conflicting evidence as to the gene's function and the role it plays. We have specifically inhibited the gene by RNA interference to study its function.

METHODS

The technique of RNA interference (RNAi) was used to downregulate the gene TSG101 in prostate cancer cells. Protein levels were detected by Western Blotting. The effect of this on the cells was examined with growth curves, colony formation assays, invasion and migration assays, and cell cycle analysis.

RESULTS

A 94% selective downregulation of the protein level was achieved. This treatment resulted in marked inhibition of tumour cell growth. The decreased level of TSG101 protein caused partial cell cycle arrest at the G1/S boundary. Additionally, RNAi-mediated downregulation of TSG101 reduced the colony forming capacity of by 89%.

CONCLUSION

These results demonstrate the effects of the powerful technique of RNAi. They show that the TSG101 gene does not comply with the characteristics of a tumour suppressor gene, but rather that its expression may be necessary for activities associated with aspects of tumour growth, having implications for both prostate and other cancers.

P110

Expression analysis of the MEK5/ERK5 signalling pathway in human prostate cancer

S.R.C. McCRACKEN, B.L. JENKINS, R. HEER, M. MATHERS, C.N. ROBSON and H.Y. LEUNG
Northern Institute for Cancer Research, University of Newcastle upon Tyne, Medical School, Newcastle upon Tyne, UK

INTRODUCTION

MAP kinase kinase-5 (MEK5) is a specific activator of ERK5 (English et al. J Biol Chem. 1995; 270: 28897–902). MEK5 is overexpressed in CaP and the levels of its expression correlates with the presence of bony metastases and decreased survival (Mehta et al. Oncogene. 2003; 22: 1381–9). Our hypothesis is that the MEK5/ERK5 pathway plays a key role in CaP progression.

METHODS

A cohort of resected human CaP tumours ($n = 83$) was immunostained with anti-ERK5 and anti-MEK5 antibodies. The results were correlated with Gleason grade, presence of bony metastases and survival.

RESULTS

Increased ERK5 staining was seen with increasing Gleason grade ($P < 0.0001$) and

correlates closely with MEK5 staining ($P = 0.0053$). Higher ERK5 cytoplasmic staining intensity was seen in patients with bony metastases ($P = 0.0044$). A Kaplain-Meier Survival plot revealed that higher ERK5 cytoplasmic expression is associated with decreased survival ($P = 0.0361$). Interestingly, a subgroup of cancers existed with strong nuclear ERK5 expression ($n = 15$). ERK5 nuclear expression is also associated with poorer survival ($P < 0.0001$). Multivariate analysis revealed that ERK5 nuclear expression is an independent prognostic marker in CaP.

CONCLUSION

These data demonstrate further evidence that the MEK5/ERK5 pathway is important in prostate carcinogenesis, and may prove to be an attractive target for future therapies.

FUNDING

British Urological Foundation

Thursday 30 June 11.00–12.00
Surgical Techniques
Chairmen: D. Hrouda and P. Rimington

P111

Pure laparoscopic versus total Robotic prostatectomy: the new gold standard?

H.R.H. PATEL, I. VICENTE, R.R. MADEB, R. ROSENBAUM, E. ERTURK and J.V. JOSEPH
University of Rochester Medical Center, Department of Urology, Rochester, NY, USA

BACKGROUND

Pure laparoscopic radical prostatectomy (LRP) has now gained a reputation to rival the open retropubic approach. The use of Robotic assisted radical prostatectomy (RAP) is becoming popular. We have compared our experience of LRP versus RAP. The aim was to assess the intraoperative outcomes, including urinary complications and early continence.

PATIENTS AND METHODS

A total of 200 patients with localized prostate cancer were treated with either LRP ($n = 50$) or RAP ($n = 150$). Both groups had similar patient demographics (age, PSA, Gleason score, and clinical stage). A chart review was performed, collating data for intraoperative and early functional outcomes. Immediate and delayed urinary complications were compiled and recovery of continence was determined at 1 and 3 months post-operatively.

RESULTS

Mean operating time (254 versus 264 mins, LRP v RAP), blood loss (299 cc ± 40:95%CI; LRP v 190 cc ± 80:95%CI; RAP) and postoperative analgesia used were equivalent between the groups. The mean prostate weight was 57 g (23–200). The complication rate was similar in each group. Urinary complications (LRP = 6% versus RAP = 2%, $p < 0.05$) included urinary leak and clot retention. Overall continence rate (no pads) was 93% within 3 months with 29% of the patients having immediate (upon catheter removal at one week post-op) control of continence across both groups.

CONCLUSIONS

Both LRP and RAP are technically demanding, however the benefits to the patient are clear. Both techniques provide excellent immediate and long-term continence, with decreased morbidity and shorter convalescence to open surgery.

P112

What is the learning curve in robotic laparoscopic radical prostatectomy for non-laparoscopic surgeons?

D.M. BOUCHIER-HAYES, S. VAN APPLEDORN, H. CROWE, J.S. PETERS and A.J. COSTELLO
Epworth Hospital and Royal Melbourne Hospital, Melbourne, Australia

INTRODUCTION

Laparoscopic radical prostatectomy (LRP) has been shown to have many advantages over open surgery, but has proven difficult for many to become adept at. The use of the Da Vinci® robotic system greatly facilitates the performance of LRP. We set out to analyse how many cases it takes to become proficient at robotic laparoscopic radical prostatectomy (RLRP).

METHODS

Two experienced open surgeons (AJC and JSP) began performing RLRP using the Da Vinci® robotic system in December 2003. Duration of various steps were measured prospectively.

Results were grouped sequentially in groups of 10 patients and analysed statistically to determine at what point these results reflected increased operative proficiency. Surgeons results were analysed separately to provide internal validation.

RESULTS

110 consecutive patients were evaluated. Overall operative times for both surgeons decreased significantly ($P < 0.05$) over the first 30 cases after which they plateaued at an average of 191 minutes (36.3% reduction). Actual operative time also decreased significantly ($P < 0.01$) at or before the 30th case until plateauing at 146 minutes (39% reduction).

CONCLUSION

RLRP is a procedure that can be mastered more quickly than standard LRP by experienced surgeons inexperienced in laparoscopic surgery, with surgical proficiency being attained at/before the 30th case.

P113

Laparoscopic radical prostatectomy: comparison between interrupted and continuous running suturing for urethro-vesical anastomosis

W.A. HASAN and M.H. DURAZI
Salmaniya Medical Complex, Bahrain

INTRODUCTION AND OBJECTIVES

During laparoscopic radical prostatectomy, many techniques are used to perform urethero-vesical anastomosis. All sutures are meticulously placed and tied under visual control, which reduces postoperative catherization time and incidence of urinary leak.

METHODS

Prospective non-randomized comparison between intraoperative and short-term postoperative data from 40 consecutive patients. The patients were divided into 2 groups: 20 patients of interrupted VUA and 20 patients of continuous running VUA. Comparison of the groups utilized the Wilcoxon rank-sum test and Chi square tests with a *P*-value of <0.05 considered significant.

RESULTS

Tables 1 & 2.

CONCLUSIONS

Both techniques were feasible. Potential advantages of the continuous running technique are a slightly shorter anastomosis time and the reduction of the post operative catherization time. Since only one knot is tied intracorporeally, UVA becomes easier and more efficacious.

Table 1

	Interrupted	Running
Number of patients	20	20
Mean Age (range)	62 (45–71)	63 (51–69)
Mean Gleason score (range)	6 (6–8)	6 (6–8)
Laparoscopic Approach		
Transperitoneal	16	7*
Extraperitoneal	4	13*
Mean PSA (range)	8.6 (4–23)	7.3 (6–19)
Mean Prostate weight gms. (range)	56 (42–88)	61 (54–91)
Pathological stage		
pT1	3	6
pT2	14	13
pT3	3	1
Mean anastamosis time min. (range)		
Mean ASA score (range)	1 (1–3)	1 (1–3)
Mean BMI (range)	24.5 (21–29)	25.1 (23–28)
Lymph node dissection	11	6*
Mean hospital stay days (range)	4.1 (2–10)	4.6 (2–6)

Table 2

	Interrupted	Continuous	*P*-value
Suture material	Vicryl	Vicryl	
Mean anastamosis time min (range)	38 (21–62)	26 (18–45)	
Intraoperative cystogram	19	20	
Intraoperative leak refashioned anastomosis	1	0	
Leak on postoperative cystogram day 3	3	2	
Mean catheter duration days (range)	4.3 (2–11)	3.6 (2–7)	
Urinary retention following catheter removal	2	1	
Continence @			
1 month	23	31	
3 months	61	72	
6 months	78	81	
12 months	87	90	
Complications	2	1	
Mean drainage ml.(range)	186 (51–628)	213 (35–830)	
Persistent leak	1	0	
Bladder neck stricture	1	1	

**Significant* P-*value* < *0.05.*

P114

Laparoscopic nephroureterectomy: a safe treatment for upper tract transitional cell carcinoma

M. SAJEEL, D. SAINSBURY, D.A. RIX, N.A. SOOMRO and D.J. THOMAS
Freeman Hospital, Newcastle upon Tyne, UK

TCC of the upper urinary tract account for 5% of all urothelial tumours. Laparoscopic nephroureterectomy (LNU) is emerging as a treatment option for these cases. We present data on the outcome of LNU from a single centre.

MATERIALS AND METHODS

25 LNUs were carried out at our centre from 2001–04 for upper tract TCC. Data has been collected prospectively to review demographic, perioperative and pathological outcomes.

RESULTS

Mean age was 66 years. Mean operating time was 209 minutes and mean blood loss 232 ml. Mean hospital stay was 4.7 days. 2 cases required conversion. There were 7 postoperative minor and 1 major complication. Median follow up is 16 months. 4 patients developed recurrent bladder tumours but there were no cases of extravesical recurrence. One patient subsequently required cystectomy and one patient with advanced disease developed distant metastases. Histology confirmed 12 Ta, 5 T1 / T2, 3 T3 TCCs and one case of CIS.

SUMMARY

LNU is a safe procedure with low morbidity. There has been no local extravesical disease recurrence to date. We feel LNU is now the treatment of choice for localised disease within the upper urinary tract. Long term follow up data is being collected.

P115

Evolving trends in the management of pelvi-ureteric junction obstruction: our experience over 10 years

K. DAVENPORT, A. MINERVINI, F.X. KEELEY, A.G. TIMONEY
Bristol Urological Institute, Southmead Hospital, Bristol, UK

INTRODUCTION

The surgical management of PUJO has changed considerably over the past ten years. We present our experience.

PATIENTS AND METHODS

Between 1994–2004, 164 procedures were performed for PUJO at our institution. Of these, 129 were primary procedures. A failed procedure is indicated by recurrent symptoms with impaired drainage on the renogram.

RESULTS

Over the ten-year period, our preferred surgical intervention progressed from open pyeloplasty (25 between 1994–2001) and antegrade endopyelotomy (15 between 1995–2000) to retrograde endopyelotomy (24 between 1997–2004) and laparoscopic pyeloplasty (66 between 1999–2004). The table below summarises the results following the primary surgical procedure. Of note, the success rate for laparoscopic pyeloplasty improved following the shift from the retroperitoneal to the transperitoneal approach in 2002 (89% versus 75%).

	Open pyeloplasty	Antegrade endopyelotomy	Retrograde endopyelotomy	Laparoscopic pyeloplasty	
				Retroperitoneal	Transperitoneal
Success (%)	86	47	71	75	89
Failure (%)	14	53	29	25	11

CONCLUSIONS

As technology has evolved so has the management of PUJO. Over the ten-year period, our preferred treatment of choice has progressed from open pyeloplasty, to endopyelotomy and finally, to laparoscopic pyeloplasty. Transperitoneal laparoscopic pyeloplasty has resulted in similar, if not better, success rates than open pyeloplasty with the accompanying improvements in postoperative recovery.

P116

Minimal invasive treatment of ureteropelvic junction obstruction in low volume pelvis: a comparison of endopyelotomy and laparoscopic nondismembered pyeloplasty

A. SRIVASTAVA, A. SURI, D. DUBEY, A. MANDHANI, R. KAPOOR and A. KUMAR
SGPGIMS Lucknow, India

This abstract has been withdrawn by the authors.

P117

Complications of laparoscopic urological surgery

G.C. DURKAN, T.J. DORKIN, D. VIJAYANAND, M. SAJEEL, D.A. RIX and N.A. SOOMRO
Department of Urology, Freeman Hospital, Newcastle upon Tyne, UK

OBJECTIVES

To analyse the complications of laparoscopic urological surgery at a single institution in the first three years.

PATIENTS AND METHODS

From April 2001 to March 2004, 279 laparoscopic urological procedures were performed. All surgeons underwent mentoring by a senior colleague experienced in laparoscopy. Data on complications was collected prospectively.

RESULTS

One hundred ninety nine nephrectomies were performed [radical nephrectomy (n = 85); simple nephrectomy (n = 52); nephro-ureterectomy (n = 36); live donor nephrectomy (n = 22); partial nephrectomy (n = 4)]. In addition, 55 pyeloplasties, 11 radical prostatectomies, 5 orchidectomies and 9 other [renal cyst ablation (n = 7); lymph node dissection (n = 1); vasal biopsy (n = 1)] procedures were carried out. There were 2 (0.7%) peri-operative deaths and 9 (3.2%) open conversions. Forty patients (14.3%) developed post-operative complications, 6 (2.2%) requiring surgical intervention [small bowel injury (n = 2); exploration for bleeding (n = 2), splenectomy (n = 1); retrieval of drain (n = 1)]. The commonest medical complication was lower respiratory tract infection (n = 10, 3.6%). Wound infection developed in 5 (1.8%) patients. Complications were associated with a higher American Association of Anesthesiologist score (P = 0.048).

CONCLUSIONS

Our complication and conversion rates compare favourably with others. Introducing laparoscopic urological surgery in a mentored environment allows surgeons to progress through the learning curve and undertake complex procedures without compromising patient safety.

P118

Simple nephrectomy, a misnomer?

M.F. O'BRIEN, M.I. KUNNI, M. BUTLER, R. GRAINGER, T.E.D. McDERMOTT and J.A. THORNHILL
Department of Urology, Adelaide and Meath Hospitals, Tallaght, Dublin, Ireland

INTRODUCTION

Robson introduced 'Radical Nephrectomy' when describing the removal of a renal tumour with the enveloping gerota's fascia. 'Simple Nephrectomy' is often used when gerota's fascia is opened and the kidney alone is removed. We believe 'Simple' should be avoided because similar morbidity to a 'Radical Nephrectomy' can occur. We compared the morbidity of these two operations.

MATERIALS AND METHODS

The records of 215 patients who underwent either simple (n = 89) or radical (n = 126) nephrectomy were analysed. Operative time (OT), blood loss (BL) and length of stay (LOS) were recorded. Statistical analysis with Stata Release 8.2.

RESULTS:

		Simple	Radical
OT –	Mean	2.1 hours	2.4 hours
	Range	1.17–3.75	1.17–4.75
	95% CI	2.0–2.3	2.3–2.5
BL –	Mean	729 ml	859 ml
	Median	588	500
	Range	50–2500	75–6400
LOS –	Median	6 days	8 days
	Range	2–35	5–35
	95% CI	4.7–7.3	6.8–9.2

CONCLUSION

While operative time (P = 0.002) and length of stay (P < 0.001) differ there was no difference in associated blood loss (P = 0.472) between Radical and Simple nephrectomy. We believe the term 'Radical' should be used when a neoplasm is being removed and that the term 'Simple' is a misnomer and should be avoided.

P119

Retrograde upper urinary tract access in patients with ileal conduit urinary diversion

T.F. AHO, D. APPLETON, J.D. KELLY and D.E. NEAL
Addenbrookes NHS Trust, Cambridge, UK

INTRODUCTION

Upper tract access is often necessary in patients with complications of ileal conduit urinary diversion. Access can be achieved by a percutaneous antegrade, or less invasive retrograde transconduit route.

PATIENTS AND METHODS

Fluoroscopic retrograde ileo-ureteric access was attempted in 25 patients with

complications following ileal conduit diversion: (Uretero-ileal urinary leak = 4, uretero-ileal or ureteric stricture = 16, ureteric calculus = 5, and upper tract tumour recurrence = 3). Both Wallace and Bricker-type uretero-ileal anastomoses were encountered. Standard interventional radiological equipment was used.

RESULT

Retrograde upper urinary tract stenting was successful in 32 of 41 ureters (78%).

Percutaneous nephrostomy tubes (PCNT) were avoided in 19 of 25 patients (76%). All anastomotic leaks stopped after stenting. 17 of 21 with ureteric strictures and/or stones were definitively treated via a transconduit approach. In patients selected for long-term ureteric stenting: 24 stents became displaced or blocked, but all were successfully replaced in retrograde fashion; and all routine stent changes were successful. There were no serious complications.

CONCLUSION

Retrograde ileo-ureteric cannulation is minimally invasive, simple and safe, and obviates the need for PCNT in many patients. It can be considered the optimal approach for upper tract access in patients with ileal conduit diversion.

P120

Cooled Thermotherapy (TUMT) for chronic abacterial prostatitis (CP/CPPS): 2 years after treatment

C. KASTNER, P.D. MILLER, H. FLETCHER and C. NELSON
East Surrey Hospital, Redhill, Surrey, UK

INTRODUCTION

We previously published up to 1-year follow-up results of a multi-center prospective feasibility study using Cooled TUMT (Targis® System, Urologix, Inc) for CP/CPPS (NIH IIIA & B). Complete follow-up data after 2 years is now available from our institution.

METHODS

Patients diagnosed with intractable CP/CPPS (NIH-CPSI Pain Score > 8) received Cooled TUMT (estimated peak interstitial temperatures: ~55°C/~70°C). Tolerability, side effects and efficacy were measured with standard diagnostic tests and questionnaires.

RESULTS

39 patients from three centres completed treatment and were followed for 1 year. Data collected over this period has just been published. All our 15 patients completed 2-year follow-up, with the following baseline vs 24-month NIH-CPSI scores: Pain 9.7 vs 5.2; Urinary 4.1 vs 3.0; QOL 6.9 vs 4.1; Total 20.7 vs 12.3 (all $P \leq 0.005$ except Urinary). 3 patients requested re-treatment. Symptom-free periods were longer after re-TUMT; 1 patient has achieved continuous relief to date, 1 experienced episodic recurrence of symptoms and 1 suffered a severe episode of acute prostatitis similar to previous episodes. No additional complications were noted.

Patients ≥50% improved over baseline	6 months All	12 months All	6 months our centre	12 months our centre	24 months our centre
NIH-CPSI-Pain	77%	63%	71%	62%	67%
NIH-CPSI Urinary	50%	43%	36%	15%	27%
NIH-CPSI-QOL	69%	54%	47%	31%	53%
NIH-CPSI-Total	69%	54%	57%	38%	47%

CONCLUSION

Efficacy of Targis for intractable CP/CPPS is comparable or better than previously reported for TUMT and other treatment modalities with good durability. Side effects remain temporary and minor. Longer follow-up and a future larger trial are required to further evaluate efficacy and placebo effect.

FUNDING

Urologix, Inc

Thursday 30 June 11.00–12.00 Prostate Cancer Treatment Chairmen: R. Kirby and D. Quinlan

P121

Total extraperitoneal robotic (DaVinci) prostatectomy: feasibility and early functional and oncological results

H.R.H. PATEL, R. ROSENBAUM, R. MADEB, I. VICENTE, E. ERTURK and J.V. JOSEPH
University of Rochester Medical Center, Rochester, NY, USA and Department of Urology, Section of Laparoscopic and Minimally Invasive Surgery, UK

INTRODUCTION

After developing our method of total extraperitoneal robotic assisted radical prostatectomy (RAP), we report an outcome analysis with early oncological and functional outcome.

METHODS

Between July 2003 and September 2004, 150 consecutive men RAP for localized prostate cancer. Perioperative data along with early oncological and functional data was prospectively enrolled.

RESULTS

Clinical stage was 126, 22, and 2 for T1c, T2a, and T2b respectively. Total operative time including robotic docking averaged 223 minutes (m) (163–486). The mean blood loss was 196 cc, with a 0% transfusion rate. Bilateral nerve sparing was performed in 117 patients, 24 had unilateral nerve spring and 9 had non-nerve sparing procedures. Post-operative pathological stage ranged from T2a to T3b, with a 14% positive surgical margin. 80% of patients were discharged from hospital within 23 hours. Overall continence rate (no pads) was 93% within 3 months. The IIEF-5 questionnaire was used to assess post-operative potency.

CONCLUSION

RAP is safe, feasible and offers the advantage of combining the precision and improved visualization from the Da Vinci system while avoiding the abdominal cavity and its associated morbidity. Our oncological and functional results show that this procedure provides satisfactory results at least comparable to open surgery.

P122

The impact of prostate size on laparoscopic radical prostatectomy

D. MOON, C. CHANG, T. GIANDUZZO and C. EDEN
The North Hampshire Hospital, Basingstoke, UK

INTRODUCTION

Removal of a large prostate can be challenging during open or laparoscopic radical prostatectomy (LRP). Although gland size has been shown not to influence functional outcome in open radical prostatectomy (ORP) (Foley, 2003), longer operating times have been reported for transperitoneal LRP (El-Feel, 2003 & Rassweiler, 2001). The aim of this study was to investigate the influence of prostate size on LRP outcomes.

PATIENTS AND METHODS

400 cases of LRP were performed from March 2000 to December 2004. 111 LRP were performed using a transperitoneal approach and 289 using an extraperitoneal approach. 319 patients had a prostate weight ≤ 75 g and 81 patients had a prostate weight ≥ 75 g on final histology.

RESULT

Patients' age, weight, PSA, Gleason sum and clinical stage were all similar. Values are mean; [1]independent samples test; [2]Chi-square test.

	Gland weight[1] (g)	Op. time[1] (min)	Blood loss[1] (ml)	Hosp. stay[1] (days)	Compl.[2]	+ margins[2]
Prostate < 75 g	46.8	192	259	3.2	4.5%	21.5%
Prostate > 75 g	97.8	207	289	2.9	10.5%	9.3%
P	<0.0001	0.03	0.25	0.04	0.07	0.03

CONCLUSION

Larger prostates were associated with a longer operating time (15 minutes) but shorter hospitalisation and fewer positive surgical margins. Blood loss and complication rates were similar. Prostate size should not be a factor determining a patient's suitability for LRP. Longer follow-up is needed to assess the effect of prostate size on functional and oncological results.

FUNDING

Tyco Healthcare

P123

A prospective non-randomised comparison of open versus laparoscopic radical retropubic prostatectomy

D. MOON, R. PERSAD and C. EDEN
The Bristol Royal Infirmary and The North Hampshire Hospital, Basingstoke, UK

INTRODUCTION

To compare the early results of open and laparoscopic radical prostatectomy (RP) in the hands of two experienced surgeons of similar age working in separate referral centres in Southern England.

PATIENTS AND METHODS

During the 8 month period 1 February 2004–30 September 2004 42 cases of open RP (ORP) were performed by a single surgeon using the technique described by Walsh and 95 cases of laparoscopic RP (LRP) were performed by a single surgeon using the extraperitoneal technique of Bollens. Parameters corresponding to the fields in the Section of Oncology database of the British Association of Urological Surgeons were recorded and compared.

RESULT

Patients' age, weight, PSA, Gleason sum, clinical stage and prostate weight were all similar. Values are mean; [1]independent samples test; [2]Chi-square test.

	Op. time[1] (min)	Blood loss[1] (ml)/transfusion[2] (units)	Complications[2] (*n*)	Hosp. stay[1] (nights)	Catheterisation[1] (days)	+ margin[2]
ORP	148	814/0.19	6	5.3	13.1	21.4%
LRP	169	236/0	4	3.0	8.6	16.8%
P	0.005	<0.0001/ <0.0001	0.08	0.0008	0.0002	0.69

CONCLUSION

LRP was associated with a longer operating time (21 minutes) but less blood loss, a lower transfusion rate, shorter hospitalisation and a shorter catheterisation time. Complication and positive margin rates were similar. Longer follow-up in a larger number of patients is needed to confirm these findings and to assess the relative performance of LRP and ORP with regard to functional and oncological results.

FUNDING

Tyco Healthcare

P124

Immediate versus deferred radiation for patients receiving intermittent hormone therapy for locally advanced prostate cancer

F. CHINEGWUNDOH, A. LEE, S. RADHAKRISHNAN, J. HINES, J. HILL and R.T.D. OLIVER
North East London Cancer Network, St Bartholomew Hospital, London, UK

INTRODUCTION

We report the results of a randomised phase 2 study comparing the impact of immediate versus deferred radiation combined with intermittent hormone therapy (HT).

METHODS

Between 1999 and 2002, 100 patients with M0 prostate cancer who were not candidates for radical prostatectomy were randomised to 6 months LHRH analogues combined with immediate standard radiation (arm A) or deferred (arm B). Patients in arm B were eligible for radiation combined with HT if failing to normalise PSA or relapsing early.

RESULTS

One patient in arm A died due to prostate cancer during median follow up of 41.2 ± 11.2 months. Patients on arm A received a median of 7 months (11.5% of total period) of HT compared to 19.3 months (46%) in arm B. 7% on arm A and 70% on arm B had required additional courses of HT by 24 months and overall 81% on arm A and 26% on arm B remain continuously off HT.

CONCLUSION

Although there is a clear advantage to immediate radiation in terms of PSA relapse free survival, 1 in 4 men in the deferred arm benefit from prolonged periods off treatment without radiation and survival to date shows equal long term disease control.

P125

Quality of life and erectile dysfunction up to 24 months after prostate brachytherapy – a longitudinal prospective study

A. HENDERSON, P. SOORIAKUMARAN, S. KHAKSAR, R.W. LAING and S.E.M. LANGLEY
St. Luke's Cancer Centre, Guildford, UK

INTRODUCTION

We assess HRQol and Erectile Function after brachytherapy using a longitudinal design and appropriate validated instruments.

METHODS

EORTC QLQ-C30 and the urinary domains of PR25 questionnaires were completed by 189 patients and the International Index of Erectile Function (IIEF-5) by 196 patients prior to brachytherapy. Patients were followed up with repeat questionnaires at 6 weeks, 3, 6, 9 12 18 and 24 months. Patients received either brachytherapy alone (BXT), neoadjuvant-hormone brachytherapy (HBXT) or combined external beam radiotherapy, brachytherapy and neoadjuvant-hormones (CBXT).

RESULTS

Several domains of the QLQ-C30 were observed to change but the changes only reached levels consistent with moderate severity for deterioration in general health, role function, social function, fatigue pain and insomnia at six weeks with recovery to levels considered 'a little' worse than baseline by 3 months. No statistically significant deterioration in global health or any specific domain of the QLQ-C30 were observed after 9 months and statistically significant improvements in emotional function, fatigue and insomnia occurred. Clinically significant increases in the urinary problems domain were reported, with moderate severity problems for up to 6 months.

47% were potent pre-implant. Data on the subgroup of potent patients (with IIEF > 12) at baseline is displayed.

QLQ-C30 Domains and IIEF Scores

	General Health	Role Function	Emotional Function	Social Function	Fatigue	Pain	Insomnia	IIEF >12/25 (Potent)
Baseline	81.7	93.1	83.1	90.4	14.9	5.5	17.4	100%
n = 189	(16.5)	(15.5)	(18.4)	(16.9)	(17.4)	(11.8)	(23.8)	(93 of 93)
6 Wk	70.3	81.0	84.6	76.4	27.3	15.8	29.1	47%
n = 157	(18.5)*+	(23.5)*+	(16.6)	(25.1)*+	(23.4)*+	(20.1)*+	(30.5)*+	(31 of 65)
24 M	76.7	94.8	94.4	90.0	5.93	5.6	10.0	69%
n = 30	(19.4)	(11.0)	(8.8)*+	(21.3)	(8.1)*	(9.1)	(15.5)	(11 of 16)

**P < 0.05 compared with baseline, +clinically significant change.*

CONCLUSION

Toxicity peaks 6-weeks following brachytherapy when erectile function and urinary symptoms following brachytherapy can impact on general HRQol. HRQol is not significantly worse than baseline levels by 9 months post implant. Greater than 2/3 pre-implant patients maintain potency at 24 months comparing favourably with other modalities for treatment of early prostate cancer.

P126

A prospective study of the co-morbidities of salvage cryosurgery for the treatment of radiation–failure prostate cancer

S. AHMED, B. LINDSEY, J. SMITH and J. DAVIES
The Royal Surrey County Hospital, Guildford, UK

INTRODUCTION

In this study we assess the complications of salvage cryosurgery for locally recurrent prostate cancer following radiation therapy.

MATERIAL AND METHODS

59 consecutive patients who underwent salvage prostate cryoablation with a minimum of 3 months follow-up (mean = 21.1 months) were included. The cryosurgery was performed utilising double or triple freeze/thaw cycles, urethral warming catheter and thermocouple probes in all cases.

RESULTS

There were no operative or cancer related mortalities. At 3 months, 72% of patients achieved PSA nadir level of less than 0.5 ng/ml. Complications included: incontinence (wearing incontinence aid) in 12%. Only one of the incontinent patients decided to have transurethral collagen injection and subsequently became dry. Erectile function was assessed in patients with a minimum of 12 months follow-up ($n = 39$). Before cryosurgery only 13 out of the 39 patients were potent. At 12 months, 3 patients regained satisfactory potency (sufficient for penetration) with help. None of the patients had rectovesical fistula or prolonged perineal pain.

CONCLUSIONS

Our series suggest that salvage cryosurgery is well tolerated, and with similar complication rates to the recently published data. Cryosurgery should be offered as a therapeutic option in selected group of patients who failed radiotherapy for prostate cancer.

FUNDING

The Prostate Project

P127

A pilot study of dietary lycopene supplementation in men with prostate cancer

N.J. BARBER, G. ZHU, J.A. BARBER, P.M. THOMPSON, K. WALSH and G.H. MUIR
King's College Hospital, London, UK

INTRODUCTION

Lycopene has been described as having a possible role in both the development and progression of prostate cancer. This study evaluates the effect of long-term supplementation in men with established disease.

PATIENTS AND METHODS

Patients had been diagnosed with prostate cancer on biopsy and had localized disease at diagnosis. All were on no active treatment beyond careful surveillance with serum PSA, the pretreatment values of which had to have an established positive gradient over time. Of 41 patients recruited, 37 continued with the treatment regime of 10 mg lycopene/day for an average of 10.4 months, undergoing monthly PSA estimates. Although included in the analysis, 6 patients were removed from the study because of disease progression.

RESULTS

The regression slopes of (log) PSA against time decreased in 26/37 (70%, 95% CI: 53% to 84%) men and in 8 cases the post treatment slope was negative. The Wilcoxon rank sum test showed there to be a statistically significant decrease in slope overall ($P = 0.001$).

CONCLUSION

This pilot study suggests that dietary supplementation with lycopene can have a real effect upon the progression of untreated prostate cancer as monitored by PSA velocity. A large, randomized study would appear to be an appropriate next step.

P128

The clinical efficacy of transurethral prostatectomy in men with established prostate cancer

V.J. GNANAPRAGASAM, V. KUMAR, D. LANGTON, R.S. PICKARD and H.Y. LEUNG
Department of Urology, Freeman Hospital, Newcastle upon Tyne, UK

OBJECTIVE

To evaluate the efficacy of TURP for LUTS in men with prostate cancer.

METHOD

Outcome analysis of TURP in 50 men with locally advanced prostate cancer and 51 men with BPH. Good outcome was defined as a sustained improvement in LUTS. Poor outcome was defined as urinary incontinence, surgical re-intervention, placement of a long term catheter (LTC) or persistent LUTS.

RESULTS

Initial catheter removal failed in a larger number of cancer patients compared to men with BPH (40% and 10% respectively, $P < 0.0001$). At a mean follow up of 32 months, a good outcome was reported in 43/51 (84%) of the BPH group and 20/50 (40%) of the cancer group ($P < 0.0001$). In the cancer group, 3/50 (6%) reported urinary incontinence, 3/50 (6%) required repeat surgery and 11/50 (22%) required a LTC within 12 months of surgery. Patients in urinary retention ($n = 12$) were more likely to have a good outcome ($P = 0.03$) while men with hormone refractory disease had poorer outcomes ($P = 0.02$). Patients who died in the follow up period ($n = 15$) were more likely to have required a LTC following TURP ($P = 0.006$).

CONCLUSION

Men with prostate cancer have significantly poorer results from TURP. Identification of predictive factors may improve surgical outcomes.

P129

Impact of surgical delay on long-term cancer control for clinically localised prostate cancer

M.A. KHAN, J.I. EPSTEIN, P.C. WALSH and A.W. PARTIN
Departments of Urology and Pathology, The Johns Hopkins Hospital, Baltimore, USA

INTRODUCTION

Radical retropubic prostatectomy (RRP) is commonly performed within a few months of diagnosis. However, the safety of such a delay has recently been questioned. We, therefore, determined whether surgical delay of up to several months is associated with a worse prognosis.

PATIENTS AND METHODS

We analysed data for 926 men who underwent RRP between January 1989 and December 1994 and compared 162 men who underwent RRP within 60 days from biopsy with 764 men who underwent RRP after a greater delay.

RESULTS

Men who underwent RRP within 60 days had 5 and 10-year biochemical disease-free survival rates comparable to men who underwent RRP after 61–90, 91–120, and 121–150 days (82% and 78% versus 86% and 78%, 86% and 75%, 86% and 82%; respectively). Those operated after 150 days demonstrated significantly greater 5 and 10-year biochemical disease-free survival rates (89% and 87%; $P < 0.04$). However, when these patients were stratified into different sub-groups based on clinical stage, serum PSA, and biopsy Gleason score delay greater than 150 days no longer impacted differently.

CONCLUSIONS

Delays of up to several months from the time of prostate cancer diagnosis and RRP does not appear to impact adversely on long-term biochemical cancer control rates.

P130

Biopsy Gleason 8–10 prostate cancer: incidence of downgrading and outcome

J.F. DONOHUE, F.J. BIANCO JR, K. KUROIWA, V. REUTER, P.T. SCARDINO and J.A. EASTHAM
Memorial Sloan-Kettering Cancer Center, New York, NY, USA

INTRODUCTION

Newly diagnosed patients with Gleason score 8–10 on biopsy are considered at high risk for treatment failure but there is often disparity between the biopsy and final pathological Gleason score. We evaluated the incidence of downgrading and its influence on outcome in this subgroup.

METHODS

246 patients with Gleason biopsy 8–10 prostate cancer who underwent radical prostatectomy between 1983 and 2004 were analysed. Biochemical recurrence was defined as PSA ≥ 0.4 ng/ml and rising.

RESULTS

Overall, 76% of cases were Gleason 8 and 24% were Gleason 9 with one case of Gleason 10. Final pathology of Gleason 7 occurred in 44% of all cases of which 51% of Gleason 8 and 25% of Gleason 9 were downgraded. Within the clinical stage groups, 58% of cT1c, 40% of cT2, and 28% of cT3 were downgraded. The 10-year biochemical recurrence-free probability was 58% for those downgraded and 30% for those with pathological Gleason 8–10. In the pathological specimen, the volume of tumor was significantly lower in the downgraded group.

CONCLUSIONS

For patients diagnosed with Gleason 8–10 prostate cancer, there is a high probability of downgrading especially if cT1c or Gleason 8 with a significant improvement in biochemical recurrence-free probability.

Thursday 30 June 14.00–15.00
Clinical Governance
Chairmen: A. Arnold and M. Fordham

P131

Should the British Association of Urological Surgeons (BAUS) consent forms be made mandatory?

A.R. RAO, B. SAHOTA, O.M.A. KARIM and H. MOTIWALA
Department of Urology, Wexham Park Hospital, Slough, UK

INTRODUCTION

A recent landmark judgement (Chester vs Afshar) in the Court of Appeal ruled that failure to warn of the risks of surgery is now considered medical negligence. BAUS, with the approval of the DoH introduced uniform consent forms for common urological procedures. The aim of this study was to analyse the use of the BAUS consent forms in Urology Departments and to determine obstacles faced to their introduction.

MATERIALS AND METHODS

A telephone and fax survey of Urology pre-assessment personnel (Clinician/Nurse) was performed. Seventy-five UK hospitals (teaching and DGH) were selected at random. Data was collected and analysed using commercial software.

RESULTS

61.33% (46/75) of hospital completed the questionnaires. Of these, only 19.56% (9/46) were using the BAUS consent forms. 64.86% (24/37) were unaware of their existence, but 38.46% (5/13) had tried to introduce the forms and had failed due to local obstacles.

CONCLUSION

Despite considerable effort to produce a unified consent form, too few urology departments use the BAUS Consent forms. Clinicians and Trusts may be leaving themselves exposed to litigation for failing to implement consent forms approved by their national body and the DoH. BAUS needs to advertise the existence of the unified consent form and facilitate its introduction.

P132

Left or right, get it right!

A.R. RAO, C. HUDD, M. LANIADO, H. MOTIWALA and O.M.A. KARIM
Department of Urology, Wexham Park Hospital, Slough, UK

INTRODUCTION

Urologists come second to Orthopaedicians in operating on the wrong side. Misinterpretation of the clinic letters or radiology reports is the commonest reason for a surgeon identifying the wrong side during surgery.

MATERIALS AND METHODS

We analysed 50 cases each of operations on the kidney, testis and ureter. The side mentioned on clinic letters, consent form and radiology reports were looked into. The results were analysed in detail to find out where the potential pitfalls were likely to be.

RESULTS

A total of 803 clinic letters were thoroughly reviewed from 150 patients. 70 (8.71%) did not mention the side of the disease, 5 (3.33%) patients had the wrong side mentioned in one of their clinic letters, of which, it was repeated twice. Radiologists had reported the wrong side In two patients. No wrong side was ever consented for and no wrong side was operated in the case files reviewed.

CONCLUSION

It should be compulsory that the side is mentioned every time in every clinic letter, consent form and theatre list for a bilateral organ. BAUS should take the initiative to implement a compulsory checklist before marking the side of surgery whenever a bilateral organ is involved.

P133

PSA Tracker – remote follow-up of prostate cancer patients

J.P. McFARLANE and J.D. McFARLANE
Royal United Hospital, Bath, UK

INTRODUCTION

The number of patients requiring follow-up for prostate cancer is rapidly increasing due to widespread PSA testing. These men are usually seen regularly in outpatient clinics, but many can be safely monitored with PSA alone rather than attending hospital. As part of the 'Action On Urology' project we have designed software to facilitate remote follow-up.

PATIENTS AND METHODS

All patients with PSA-producing tumours opting for active surveillance, and those stable following treatment, were offered remote follow-up. Patient details were entered into the database along with the planned date of the next PSA test. The program automatically generates completed biochemistry request forms, patient reminder letters for overdue tests, summary reports for use in clinic and all GP letters. It also produces graphs of PSA values against time and calculates PSA doubling times.

RESULT

Of patients offered remote follow-up, over 90% preferred it to continued review in outpatients. To date 54 patients have been recruited on the system which has been running for over 6 months. No patients have yet required recall to clinic.

CONCLUSION

Remote follow-up of prostate cancer is feasible and popular with patients. The 'PSA Tracker' software helps automate this process, reducing outpatient numbers and saving secretarial time.

FUNDING

'Action On Urology' project have partially funded this work

P134

Telephone follow-up of stable prostate cancer: resource implications and patient satisfaction

R.C. CALVERT, H.B. JOSHI, C. GARLICK, J.R.W. PARRY, G.K. BANERJEE and P.J. DONALDSON
The Ipswich Hospital NHS Trust, Ipswich, UK

INTRODUCTION

A telephone follow-up service for stable prostate cancer was set up as part of the Action On Urology initiative. We describe the establishment of this service, its resource implications and an audit of patient satisfaction.

METHODS

Men with prostate cancer and stable PSA were offered the option of telephone based follow-up. Following a PSA test, structured evaluation was performed by nurse practitioners by telephone using proformas. Strict inclusion and return to clinic criteria were applied. A cost evaluation was performed and postal questionnaire-based audit of the service performed.

RESULTS

160 patients have been enrolled and 64 evaluated to date (100% compliance). Of those evaluated 67% were on hormonal treatment, 22% on watchful waiting and 11% post radical prostatectomy. 3 patients needed to return to clinic. Direct cost savings were £44 per patient visit. Postal questionnaire response rate was 78%. 98% of patients found the instructions easy to understand. 98% felt they had adequate time to ask questions. 4% found the answers incomplete or confusing. 96% rated the service good or excellent. 93% said they would prefer to continue with telephone follow up.

CONCLUSION

Telephone follow-up of stable prostate cancer was met with high patient satisfaction rates and cost benefits.

P135

Using technology to improve the MDT

G.S. MCINTOSH, P. MANKTELOW, M. NEWTON, A. AL MUSBAHI and L. TZOULIADIS
Salisbury District Hospital, Salisbury, UK

Since August 2004, we have used a new approach to improve our urological multi disciplinary meeting. During the meeting two computerised clinical databases are open, accessed through the hospital's computer network. The BAUS Cancer Registry database allows live update of information such as grade and stage of the cancer, treatment intention etc. A clinical database, part of our hospital Patient Administration and Tracking System (PATS), devised by clinicians and technical staff, allows production of an A4 document incorporating patient demographic data, cancer diagnosis, including grade and stage, treatment intention etc. Investigations, drug treatment requested, date of planned follow up or admission are highlighted and at completion of the MDT meeting this document is faxed to the general practitioner and the hard copy filed in the hospital notes. Three meetings have taken place with primary care, to introduce the system and gain feedback. This approach has dealt with 172 patients improving completeness of BAUS Cancer Registry data, speeding communication with GPs and saving departmental secretaries' time. Virtually all the GPs find the system useful and the only adverse comments related to confirmation of fax arrival. We continue to improve and refine the systems.

P136

Development of a multifunctional database for clinicians delivering a urological cancer service

P.A. ZAMMIT, V. MISHRA, S.J. HARLAND and M.R. FENELEY
Institute of Urology, UCLH, London, UK

INTRODUCTION

Databases are powerful tools that have much to offer clinicians and administrators. The BAUS Section of Urology Database has proved itself to be useful and successful, but does not have the capability to evaluate data on the same patient throughout their journey. Accreditation standards for urological cancer care require this function. We have developed a database for this purpose.

METHODS

A series of workshops were held to determine the functions to be met by our database. The data fields and their relationships were then defined in a robust database structure. The 'front end' user interface was then developed for assuring functionality and user-friendliness.

RESULTS

The database enables serial clinical, MDT and administrative data to be recorded, organised, and presented for editing or discussion. Reports can be generated for hospital notes and communication with general practitioners. MDT discussions can be summarised real-time and communication facilitated. Data can be exported to the BAUS Section of Oncology Database.

CONCLUSION

This database tool provides very substantial functionality benefiting the NHS administration and patient care. Outstanding issues relate to compliance with hospital network protocols and assurance of confidentiality for internet access. Further evaluation is supported by the Modernisation Agency through the Action On program.

P137

Variability of treatment decisions among consultant

J.R.M. WILSON, R.P. MacDONAGH, P. EWING and C. O'BOYLE
Taunton and Somerset Hospital, Taunton, UK

INTRODUCTION

To determine whether consultant urologists are consistent when making treatment choices for prostate cancer patients.

METHODS

30 consultant urologists were given 70 paper representations of prostate cancer patients. They were asked to judge how strongly they felt these 'patients' warranted radical prostatectomy, radiotherapy or conservative treatment. The cases were presented in the style of an MDT meeting, each having realistic clinical information. Within the 70 cases there were hidden 13 identical cases randomly repeated.

RESULTS

Reliability coefficients were calculated for the treatment options. When making treatment decisions for the identical cases consultants were found to be inconsistent in their judgement (reliabilities ranged from 13 to 100%, overall reliability was 61). Consistency between consultants was found to be worse (inter-consultant consistency ranged from 37 to 58%).

CONCLUSIONS

Consultants show significant inconsistency when choosing treatment options for identical patients. The choice of particular treatments seems to vary greatly between consultants. Although consultants in this study were provided with only a basic core of data for each patient, this information resembles the decision-making process in the majority of MDT meetings. We clearly need to find ways to better standardise the management decision process for patients with prostate cancer.

P138

A high volume surgeon or a high volume hospital for urological cancer surgery?

J.E. McCABE, A. JIBAWI, S. WILLMOTT and P.M. JAVLE
Michael Heal Department of Urology, Leighton Hospital, Crewe, UK

INTRODUCTION

Thresholds for the minimum number of urological cancer procedures that a surgeon or hospital should undertake have been set in the UK (NICE guidelines). We attempted to determine whether surgeon or hospital workload is the best predictor of outcome.

METHODS

All cystectomies performed for cancer in England over 5 years were analysed from Hospital Episode Statistics (HES) data. Our previous work has enabled us to define high volume hospitals (HVH) as those performing >14 cystectomies/yr and high volume surgeons (HVS) as those performing >8. Outcomes were measured by in-patient mortality rate (MR).

RESULTS

A total of 6308 cystectomies were performed, with an overall MR of 5.53%. Of these, 2181 were performed by HVS and 2062 in HVH. Mean MR for high and low volume surgeons were 4.23% and 6.70% ($P = 0.03$) respectively. For high and low volume hospitals (LVH) the MR were 7.65% and 4.57% ($P < 0.01$). Notably, the MR for a HVS working in a HVH was 3.95% and for HVS in a LVH was 4.77% ($P = 0.15$).

CONCLUSION

There was no significant difference in the mean MR of a HVS working in a LVH compared to a HVH, suggesting that case volume is more effectively measured by individual surgeon volume when predicting outcome.

P139

Funding for tertiary referral nephrectomies is inadequate for the actual cost

N.C. BORLEY, M. SHABBIR, C.W. CUTTING and C.J. ANDERSON
St George's Hospital, London, UK

INTRODUCTION

The current reorganisation of the healthcare service has created the Healthcare Resource Group as a 'Unit of Currency within the health service'. This groups together clinically similar treatments that use 'common levels of healthcare resource'. Following this the reimbursement for a nephrectomy has reduced from £9659 to £4388. This is the same, whether this is a straightforward procedure, or a complex one requiring tertiary referral and multiple specialist team support.

METHODS

As a tertiary referral centre for nephretomies, we analysed the cost of the 88 radical and partial nephrectomies carried out over the past 2 years using official costings for total stay, ITU stay, transfusion, renal support and operative time.

RESULTS

Over the past 2 years, 88 nephrectomies were carried out at this centre, 55 partial and 33 radical, 29% of which were tertiary referral. The average costs were; ward stay £2007 (11 days), ITU stay £2814 (2.4 days), transfusion £526 (4.5 units), renal replacement £207 (1 day) and operative time £3929 (4.3 hours). The average cost is £9483.

CONCLUSIONS

The current reimbursement for a trust carrying complex nephrectomies is 46% of the actual cost and is therefore unsustainable.

P140

Holmium laser ablation of recurrent superficial bladder tumours under local anaesthetic as a day case procedure safely reduces costs with a high patient satisfaction rate

A.C.P. RIDDICK, R.C. CALVERT, M.R. HABIB, P.J. DONALDSON, J.R.W. PARRY and G.K. BANERJEE
Department of Urology, Ipswich Hospital, Heath Road, Ipswich, UK

INTRODUCTION

As part of a successful action on bid we transferred selected patients with recurrent superficial bladder carcinoma from inpatient to day case management. The primary aim was to reduce length of hospital stay.

PATIENTS AND METHODS

Rigid selection criteria were used to determine appropriate patients for Holmium laser ablation of recurrent superficial bladder carcinoma (low volume, superficial, moderate to low grade tumours) via local anaesthetic flexible cystoscopy. We have calculated a cost benefit analysis of number of beds saved and anaesthetic cost saving. Complications and patient satisfaction (postal questionnaire) were also recorded.

RESULT

To date 88 patients have undergone laser diathermy with a saving of 184.4 days hospital stay. Anaesthetic cost saving was £370. Patient satisfaction was high with only 28.6% finding the experience less favourable than simple flexible cystoscopy and 100% reporting that they would rather undergo day case laser management rather than in patient cystodiathermy. Complications occurred in 3 patients, none of which required admission.

CONCLUSION

Our study demonstrates that selected patients with recurrent superficial transitional cell bladder carcinoma can be managed with Holmium laser ablation as a day case under local anaesthetic safely with high satisfaction rate. Costs and length of hospital stay are significantly reduced.

Thursday 30 June 14.00–15.00
Penile Surgery
Chairmen: D. Greene and T. Terry

P141

The role of plaque incision and Tutoplast grafting in Peyronie's disease

J.S. KALSI, P. KUMAR, A. MUNEER, N. CHRISTOPHER, D.J. RALPH and S. MINHAS
St Peters Deaprtment of Andrology, The Institute of Urology, London, UK

INTRODUCTION

The penile deformity associated with Peyronie's disease can be corrected by plaque incision and saphenous vein grafting (Lue Procedure). Tutoplast is a commercially available Modified Human Fascia Lata. The aim of this study was to assess the outcome using this alternative graft.

METHOD

Over a 4 year period 14 patients (mean age 51, range 34–59) with Peyronie's disease had their penile deformity corrected by plaque incision and Tutoplast grafting. An assessment of erectile function, penile deformity and stretched penile length were measured pre- and post-operatively.

RESULTS

Mean pre-operative penile deformity was 67.2° (range 10°–90°). Overall satisfaction rate (Excellent or satisfactory) was 92.8%. With a mean follow-up of 31 months (range 17–37) the penis was completely straight in 11 of 14 (78.6%) patients. Postoperatively one patient (7%) developed erectile dysfunction. In ten patients (71.4%) there was no loss of length whereas four patients (28.6%) reported penile shortening of 1 cm or greater.

CONCLUSION

Tutoplast® provides a reliable alternative in Peyronie's disease where saphenous vein is not available. Initial results suggest the post-operative outcome is similar to saphenous vein without the morbidity associated the donor site. However, there still remains a significant risk of penile shortening and development of post-operative ED.

P142

Correction of penile curvature in Peyronie's disease using plaque incision and grafting: is it the gold standard?

S. SIVALINGAM and H. SCHWAIBOLD
Bristol Urological Institute, Southmead Hospital, Bristol, UK

INTRODUCTION

One of the techniques for correction of penile curvature in Peyronie's disease is plaque incision and grafting. We report the outcomes from a series which used both porcine and autologous dermal grafts.

PATIENTS AND METHOD

21 men with a median age of 58 years (range 41–76 years) were assessed at 2 years after plaque incision and grafting procedure. 7 men had autologous dermal graft and 14 men had porcine dermis (Pelvicol™, Bard Urology, UK). A self-designed questionnaire was used to assess outcomes.

RESULTS

Parameters	Outcome
Penile straightening (subjective)	6 (29%) had recurrence of curvature.
Penile shortening (subjective)	21 (100%) had noticeable penile shortening 13 (62%) reported shortening up to 3 cm.
Post-operative potency (subjective)	6 (29%) developed new impotence impairing penetrative intercourse.

CONCLUSION

Plaque incision and grafting using porcine or autologous dermal graft caused significant patient dissatisfaction and morbidity mostly through penile shortening and new postoperative impotence. Better patient selection of those who are suitable for this operation is required. The use of alternate graft materials and penile implants in these patients also needs to be explored further.

P143

Early experience with infection reduction using coated inflatable penile prostheses (IPP)

S.K. WILSON*, D.J. SUMMERTON† and J.R. DELK*
**Institute for Urologic Excellence, Van Buren, AR, USA, †Leicester General Hospital, Leicester, UK*

INTRODUCTION

IPP infection remains a devastating surgical complication. In 2001 American Medical Systems (AMS) introduced InhibiZone coated implants which elude minocycline and rifampicin into the implant spaces. In 2002 Mentor introduced Titan hydrophilic coated implants which allow the antibiotics in which the implant is dipped to elude off the IPP surface.

PATIENTS AND METHODS

A retrospective note review of all patients who had received a coated implant by the authors via a scrotal incision revealed 385 InhibiZone and 49 Titan IPPs. Follow up was >6 months.

RESULTS

None of the 203 primary InhibiZone implants developed infection, with 1 (1%) infection in 79 diabetics. 140 AMS revisions had 7 infections (4%). Revision infections were divided into those with (101 : 3%) and without (39–10%) antibiotic washout. 34 Mentor Titan IPP (6 diabetics) had 2 infections. 15 revisions with washout had 2 infections, although 50% of the infections in the Mentor group were complicated by intra-operative problems.

CONCLUSIONS

Early results in infection reduction with the coated IPP are encouraging. Statistically significant reduction of infection is reported in patients with and without risk factors for the AMS InhibiZone IPP. Our numbers are presently too small for a conclusion on the Mentor Titan.

FUNDING

American Medical Systems

P144

Reimplantation of inflatable penile prostheses (IPP) into scarred corporal bodies facilitated by the new AMS 700CXR cylinders

D.J. SUMMERTON*, T.R. TERRY*, J.R. DELK† and S.K. WILSON†
**Leicester General Hospital, Leicester, UK, †Institute for Urologic Excellence, Van Buren, AR, USA*

INTRODUCTION

Reimplantation of an IPP after a previous implant has become infected and removed is a formidable challenge. Creating a space is difficult as the usual dilators are ineffective. We have improved implantation using cavernotomes, the transverse scrotal incision and downsized cylinders. The new AMS 700CXR IPP is specifically designed for such difficult cases.

PATIENTS AND METHODS

15 patients had AMS 700CXR cylinders placed. All had corporal fibrosis from previously infected implants. All were dilated to 9 mm distally and 9–11 mm proximally with disposable cavernotomes. Dilation to the 'standard' 13 mm was impossible. The CXR reduced input tubing angle and the am elongated base helped insertion into the stenotic corpora.

RESULTS

Operative time was decreased because of these new cylinders. Intra-operative corporal perforation occurred proximally in 5, treated with a rear tip extender sling and distally in 3, treated with instant repair. All patients are successfully using the implants 1–9 months post-op. An impending cylinder erosion at 5 months was treated by distal corporoplasty. 3 patients have already had downsized cylinders replaced with standard size cylinders [J. Urol. 2004; 171 (suppl. 4): 237].

CONCLUSIONS

Early results with the AMS 700CXR into scarred corpora are encouraging. The product enhancements facilitate successful implantation in these difficult cases.

FUNDING

American Medical Systems

P145

Feminising genitoplasty in male to female gender dysphoria: early & late surgical results and patient satisfaction

J.C. GODDARD, R.M. VICKERY, A. QUESHI and T.R.L. TERRY
University Hospitals of Leicester NHS Trust, Leicester, UK

OBJECTIVES

Gender reassignment surgery (GRS) forms one part of gender dysphoria management. This study examines the early and late post-operative results in a single surgeon series.

METHODS

A retrospective case-note review and telephone questionnaire was carried out on all GRS patients in our centre. Simple questions were directed at identifying surgical complications, outcome and patient satisfaction.

RESULTS

Short term: Of 233 casenotes, 95% could be retrieved. Median age was 41 (19–76) years. Median hospital stay was 10 (6–21) days. A record of the first outpatient visit was available in 197 (84.5%) cases. The median time to follow up was 56 (8–351) days.

Long term: We successfully contacted 70 (30%) patients. Median age was 43 years (19–76). Median follow up was 36 months (9–96).

	8 weeks ($n = 196$)	3 years ($n = 70$)
Sensitive neoclitoris	86%	98%
Adequate vaginal depth	82%	61%
Urethral stenosis	18%	23%
Satisfied	89%	80%

CONCLUSION

In this, the largest series of early results following male to female GRS, post operative complications are common in this complex surgery. Follow up of gender dysphoria patients is difficult. There is a good overall cosmetic and functional result with a sustained high patient satisfaction.

P146

The first 150 cases of penile cancer managed in a UK supra-regional referral centre: lessons learned

P. HADWAY, C.M. CORBISHLEY and N.A. WATKIN
St George's Hospital, London, UK

INTRODUCTION

The introduction of a supra-regional referral centre in the UK for the management of penile cancers in 2001 has lead to a multidisciplinary team gaining a broad experience with the management of this rare disease. We review 150 patients managed over a 4-year period and discuss the lessons learned.

PATIENTS

150 patients with penile cancer were referred between 2001–2004. Patient's average age was 60.4 years. Of these, 135 were new diagnoses and 15 were recurrences. 133 required penile surgery and 44 lymph node dissections were conducted.

RESULTS

Penile preserving surgery appears to offer patients a safe alternative to amputation. Both the functional and oncological results have been promising. The use of ultrasound guided fine needle aspiration cytology and dynamic sentinel lymph node biopsy in staging has become routine. A detailed histological minimum data set, developed by a dedicated consultant has helped to standardise reporting. Close links with interested colleagues in plastic surgery, dermatology, radiology and histopathology have been vital.

CONCLUSIONS

The frequent use of penile preserving surgery and dynamic sentinel lymph node biopsy are helping to set new standards of practice. The initiation of much needed trials, could become possible with the advent of the supra-regional referral centres.

P147

Are histopathological features and tumour subtypes predictive of outcome for patients with penile cancer in the United Kingdom?

O. KAYES, V. AGRAWAL, P. HEGARTY, A. FREEMAN, D. RALPH and S. MINHAS
Institute of Urology and Nephrology, Middlesex Hospital, London, UK

INTRODUCTION

This study reviews the histopathological subtypes for squamous cell carcinoma (SCC) of the penis and the features predictive of lymphatic spread.

MATERIALS AND METHODS

A retrospective review was performed of all penile SCC treated at a tertiary referral centre. Archived specimens were reviewed by a single consultant histopathologist for tumour type, depth of tumour invasion, grade, stage and vascular invasion. These data were compared against lymph node status as a measure of clinical outcome. Statistical analysis was performed to establish potential histopathological features predictive of lymph node metastases.

RESULT

Of 104 patients, outcome data was available in 42 patients (40%) who underwent lymphadenectomy or node biopsy. 24 patients (57%) were positive for metastatic disease. In this series, pathological subtypes included; standard SCC (68/104), papillary (14/104), verruciform (5/104), basaloid (8/104), mixed (4/104) and carcinoma in situ (5/104). Statistical analysis showed no relationship between histopathological variables and lymph node status.

CONCLUSION

There are diverse subtypes of penile SCC, with standard SCC the most common variant. However conventional histopathological features do not appear to be predictive of outcome.

P148

Comparison of diagnostic radiological modalities in predicting inguinal lymph node involvement in penile cancer

O. KAYES, C. ALLEN, C. LI, D. RALPH and S. MINHAS
Institute of Urology and Nephrology, Middlesex Hospital, London, UK

INTRODUCTION

This study evaluates the use of MRI and CT scanning in the assessment and prediction of inguinal lymph node metastases in patients with penile cancer.

MATERIALS AND METHODS

A retrospective analysis of a cohort of patients, who underwent inguinal lymphadenectomy and were staged prior to surgery with either MRI or CT. Radiological reports and films were reviewed by a consultant radiologist and lymph node status established using current radiological criteria. These data were then compared with histopathological outcome at surgery. Sensitivity, specificity and predictive value were calculated.

RESULT

30 patients (mean age 61 years) underwent a total of 54 inguinal lymph node dissections (superficial or radical). Comparison between radiological assessment and histopathological diagnosis is shown in the tables below:

		Pathology result	
		Positive	Negative
MRI	+	6	5
	–	5	12
CT	+	7	5
	–	1	13

	MRI	CT
Sensitivity	55%	88%
Specificity	70%	72%
PPV	55%	59%
NPV	70%	93%

CONCLUSION

These imaging modalities lack sufficient accuracy when used in the staging of potential lymphatic spread in patients with penile cancer.

P149

Total glans resurfacing for pre-invasive lesions of the penis: a new approach

P. HADWAY, R. SINGH, C.M. CORBISHLEY and N.A. WATKIN
St George's Hospital, London, UK

INTRODUCTION

Premalignant lesions of the penis have conventionally been treated by topical chemotherapy, laser or cryotherapy. This can be successful but is associated with a high local failure rate necessitating careful long-term surveillance. Ablative therapy may result in unsightly scars. We have therefore treated patients who have failed conventional therapy or have glans deformity with total glans resurfacing. This involves complete removal of the glans epithelial and subepithelial tissues and replacement with an extragenital skin graft.

METHODS

All patients referred were offered surgery as an alternative to conventional therapies. 11 patients underwent surgery: 9 had intractable CIS following 5-Fluorouracil therapy, one had glans dysplasia with a superficial preputial carcinoma and one had a verrucous carcinoma.

RESULTS

There were no post-operative complications or loss of skin graft. Excellent cosmetic results were achieved. In all cases, resection margins were clear. To date, no evidence of disease recurrence has been observed (mean 16 months).

CONCLUSIONS

Glans resurfacing is a successful surgical technique for the management of pre-invasive or superficial exophytic penile lesions. It has the potential to restore normal anatomy and eliminate the risk of local recurrence by replacing diseased glans epithelium with healthy new skin from an extra-genital site.

P150

Penile reconstruction with the use of skin grafting

D.J. SUMMERTON, A.N. CHRISTOPHER, S. MINHAS and D.J. RALPH
St. Peter's Andrology Centre, The Institute of Urology, Middlesex Hospital, London, UK

INTRODUCTION

Penile skin loss may give considerable functional and psychological problems. We describe the use of both split skin and full thickness skin grafting on the penis for a wide range of conditions in 74 patients in a single centre.

PATIENTS AND METHODS

Retrospective note review of penile skin grafting patients between 1998 and 2004 revealed numerous aetiologies, including carcinoma 38%, B.X.O. 34%, excessive circumcision 10%, traumatic amputation 7%, splitting frenulum (non-B.X.O.) 4%, and lymphoedema 4%. In B.X.O. and lymphoedema the diseased area was excised and grafted. The traumatic and circumcision injuries had skin added. Carcinoma patients underwent glans excision or partial penectomy and SSG pseudoglans creation. Post-operative results were recorded and photographed.

RESULTS

SSGs and FTSGs took well, except in 7 (25%) of the cancer patients (4 had prior radiotherapy). The most successful grafts were those in the B.X.O., splitting frenulum, trauma and the excessive circumcision groups. Complications included 2 SSG contractures and 2 raised donor site wounds.

CONCLUSIONS

SSGs are best used on the glans and coronal area, whereas FTSGs are better on the penile shaft. We have shown that both SSGs and FTSGs take reliably on the penis, allowing patients to resume sexual activity with confidence.