Tuesday 27 June 0930–1045
Clinical Governance
Chairmen: P. Jones and K. Sethia

012

The national audit of the BAUS procedure specific consent forms

A.M. SINCLAIR, J.M. ADSHEAD and G. WILLIAMS
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INTRODUCTION

The BAUS procedure specific consent forms were first introduced over 2 years ago. Some departments refuse to even consider them while others have embraced them and expanded them to cover other specialities. These anecdotal extremes needed to be clarified and therefore, in order to establish exactly how these forms are perceived and how they can be improved, a national audit was undertaken.

METHODS

All full and junior members of BAUS were sent a questionnaire (n = 970). This looked at departmental as well as individual views. The main aspects were implementation; general structure of the forms; content of the individual consent forms; and omissions.

RESULTS

The response rate for individuals was 47%. However 81% of urology departments gave at least one response. 55% of departments are currently using the forms or are in the process of implementation. 28% of departments are prevented from using these forms at Trust level. There were 181 individual comments on the process of implementation, structure and content of the consent forms, and 24 additional procedures proposed.

CONCLUSION

The individual comments and additional procedures identified from this audit need to be reviewed, and incorporated, to produce an improved second edition of the BAUS consent forms.

013

Testing the validity of informed consent

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AIM

We aimed to test the validity of informed consent using a prospective questionnaire based survey in patients attending for transrectal ultrasound (TRUS) and biopsy.

PATIENTS AND METHODS

Fifty-two consecutive patients attending the TRUS clinic filled three questionnaires before, immediately after and 2 weeks after the procedure. Patients' awareness about the need, implication, procedure and side effects of TRUS biopsy was taken as fully informed consent. The surgeon also filled-up a questionnaire to corroborate patients' responses.

RESULTS

Patients' awareness of each facet of consenting were: need-40%, implications-48%, procedure-73% and complications 0–52% before the procedure. Age and partners' involvement did not improve the validity. Written consent improved knowledge of need in 19%, knowledge of side effects in 21%. Comparison of the leaflet to the actual procedure, used as a surrogate to assess patient satisfaction, showed decline in satisfaction by 17% due to side effects (adverse events 52% vs. 24%).

CONCLUSION

Fully informed consent could be obtained in only 21.2% of patients despite sufficient information. Cognitive dissonance and other patient related factors could account for the above result. Leaflets improved subjects understanding though not substantially. Occurrence of adverse event and not the adequacy of information determine the (dis) satisfaction level of the procedure.

014

Competency and training of general surgery specialist registrars in emergency urology

N. THIRUCHELVAM and A. ADAMSON
Royal Hampshire County Hospital, Winchester, UK

INTRODUCTION

In many hospitals, junior urological staffing numbers are inadequate to provide middle grade emergency cover 24/7. As a result, in many Trusts, specialty cover is provided by General Surgical juniors for much of the time, often with little prior urology exposure. In this study we wanted to assess the competence and confidence of general surgical SpRs in emergency urology.

METHOD

All general surgical SpRs in the region (n = 63) were sent a short anonymous questionnaire listing questions regarding emergency urological procedures and their competence, and any previous urological training.

RESULTS

We found that 63% of surgical SpRs provide out-of-hours middle grade urology cover despite only 47% having received formal training. Training in four basic emergency urology procedures was low. Only 49% of surgical SpRs thought these urology procedures should be in their syllabus and only 28% thought they should perform such procedures out-of-hours.

CONCLUSIONS

There are a significant proportion of urological cases in the surgical 'take'. Despite the need for general surgical involvement, we have shown relatively small numbers of surgical SpRs have adequate training in emergency urology. In addition to Clinical Governance concerns, this study has highlighted to surgical educators the need for urology in surgical training.

015

Changes: A survey of BAUS members on modernising Urology

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St Bartholomew's Hospital, London, UK

INTRODUCTION

British Urology has recently embraced changes to training/career structure. We undertook a nationwide survey assessing attitudes towards these changes.

METHODS

An anonymous questionnaire was posted to 703 members of BAUS randomly chosen from the 2005 Yearbook.

RESULTS

Two hundred and seventy two members responded (rate 39%); 65% were consultants, 8.5% were staff associate specialist (SAS), 23% were junior members. *Change*: 60% agreed urology in the UK needed to change. 72% felt there had been inadequate consultation and 69% lacked confidence in the implementation process. 65% of consultants would not proceed with the current changes. *Training*: 72% felt the remit of the urologist was not defined. The majority thought training would be insufficient to train urologists (56%) and urological surgeons (55%). *Job satisfaction*: 73% felt urologists and urological surgeons would have unequal status amongst medics. 31% of consultants, 34% of registrars and 61% of SAS would agree to become a consultant urologist if asked. *Patient care*: 51% felt patient care would not improve. 74% agreed the changes were government driven.

CONCLUSIONS

It was widely acknowledged amongst respondents that British Urology needs to change. The majority of consultants felt they would not proceed with the current changes, demonstrating the need for further discussion within BAUS.

016

Consultant urologist: friend or foe?

E.J. BROMWICH, L.Z. SOLOMON, M.H. BAQAI and S.A. HOLMES
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INTRODUCTION

MMC is underway, and Urology under the lead of BAUS has taken a pioneering role in the development of the new 'consultant urologist' who will have a shorter, less intense training, resulting in reduced operative skills which will not include major open surgery. Our trust has employed a locum consultant over the last 18 months whose remit may be similar to a new style consultant urologist. His job plan excluded major open and laparoscopic surgery or complex endourology.

METHODS

We reviewed all in-patient operative activity by the locum surgeon (A) and compared this with the activity of another consultant within the department (B) over the same time period in 2005 and 2003. In 2003 there were six permanent consultants within the department.

RESULTS

TABLE 1: Breakdown of operative activity

	Endoscopic	Inguinoscrotal	Open/major
Surgeon A (2005) *n* = 243	220	23	0
Surgeon B (2005) *n* = 112	45	6	64
Surgeon B (2003) *n* = 173	133	6	34

CONCLUSION

This study identifies the capacity a new consultant urologist may achieve within a department allowing subspecialisation within the remainder of the department. There are a number of advantages and disadvantages to this degree of subspecialisation which will be discussed in full.

017

Modernising medical careers: the numbers game

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Barnet and Chase Farm Hospitals NHS Trust, Enfield, UK

INTRODUCTION

The urological workforce has led the current evolution in medical working practice with 'new style' trainees recruited in 2005. Manpower requirements are difficult to predict and debate has centred on future requirements for urologist versus urological surgeon. We have collected workload data with which detailed assessment of current operative practice is possible.

METHOD

We prospectively collected data for all urological activities. The data from five large hospitals was amalgamated for a 12-month period and case type and time allocation per urological surgeon was determined.

RESULTS

Activity data was reviewed for a population of 2.3 million people encompassing the work of 16 consultant urological surgeons. The proportion of complex operative cases was 8.6% accounting for 34.9% of total operating time. Operative cases designated as major or complex represented 32.6% of case numbers and almost 60% of total operating time.

CONCLUSION

The workload that may in the future be carried out only by urological surgeons represents a small proportion of overall case numbers yet the total operating time represents a significant component of current surgical workload. Manpower planning for the future of urological service delivery must reflect detailed analyses of current working practices.

018

How many urological surgeons do we need? – an evidence base for urological workforce planning

V.K. SANGAR, C. NATHANIEL and S.R. PAYNE
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INTRODUCTION

Modernising Medical Careers (MMC) suggest an average urological unit should consist of two Consultant Urologists and one Urological Surgeon although a paucity of data leaves questions about these manpower assumptions. This study aimed to demonstrate trends in operative urological activity to better inform the future need for Urological Surgeons.

MATERIALS AND METHODS

A retrospective analysis of all elective operative urological surgery over a fifteen-year period was performed. The absolute numbers of patients presenting for different grades of surgery were aggregated and analysed utilising the Spearman rank correlation test.

RESULTS

Aggregated data from 27 839 procedures demonstrated no change in the number of operations (rs 0.01, NS) or the number of diagnostic endoscopic procedures (rs 0.21, NS) carried out. There was a 70% reduction in TURP (rs -0.89, $P < 0.0001$) and an increase in ureteroscopy (rs 0.82, $P = 0.0002$) for stone disease. The proportion of simple inguino-scrotal surgery has not changed ($r = 0.21$, NS) but, importantly, there has been no change in the amount of major surgery performed (rs -0.43, NS).

CONCLUSIONS

This study suggests there will be as great a need for Consultant Urological Surgeons in the future as presently and that our manpower assumptions for future service provision will need revision.

Tuesday 27 June 1400–1500
Prostate Cancer
Chairmen: P. Albertsen and J. Anderson

026

Age-specific PSA reference values based on a screening population of British men

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INTRODUCTION

Age-specific PSA reference values are recommended by the DoH and NICE as a referral trigger for men with abnormal PSA values. They are arbitrary values in the UK and are based on the international literature.

METHODS

Data of 1970 men with benign histology from the Gwent screening study were used out of a cohort of 2063 men. The adaptive trimmed maximum likelihood method as the best way of removing outliers which do not come from a log-normal distribution was used after data transformation. The 95% percentile was used as cut-off value

RESULTS

The true statistical 95% percentile for PSA in a screening population for the age groups 50–59.9 years, 60–69.9 years and 70–79.9 years are 2.4 ng/ml, 5.7 ng/ml and 10.1 ng/ml, respectively.

CONCLUSION

These values are distinctly different and higher compared to the recommended referral cut-off values by the DoH and NICE. The adoption of higher values for the older age groups may be a sensible policy to avoid unnecessary investigation of old men with high PSA values.

027

Does prostate cancer de-differentiate with age?

B. PATEL, S. FOWLER, A.W.S. RITCHIE, ON BEHALF OF THE BAUS SECTION OF ONCOLOGY
Gloucestershire Royal Hospital, Gloucestershire and BAUS Section of Oncology, London, UK

INTRODUCTION

While there is some evidence of de-differentiation of prostate cancer with time [1,2] the relationship between increasing age and Gleason grade at presentation has received little attention.

METHODOLOGY

We used data on newly presenting patients, as reported to the BAUS cancer Registry during 2004.

RESULTS

A total of 14858 new cases of prostate cancer were recorded, with a histological confirmation rate of 93.4%. Gleason grade was recorded in 85.9% of cases.

The proportion of Gleason grade 8–10 tumours rises in a consistent, linear trend with age from 16.4% at age 60 to 49.6% in the age group ≥90. There is a similar trend between increasing Gleason grade and UICC stage with 17.3% of Gleason grade 8–10 in stage II compared with 55.7% in stage IV.

TABLE 2: Gleason grade breakdown for each age group (%)

Age Group	Gleason 2–4	Gleason 5–6	Gleason 7	Gleason 8–10
<60	1.9	56.2	25.5	16.4
60–64	1.5	53	29.3	16.2
65–69	1.9	47.6	30.8	19.6
70–74	2.1	42.7	31.3	23.8
75–79	1.7	35.0	34.8	28.5
80–84	1.2	29.3	34.3	35.3
85–89	2.2	24.6	32.7	40.6
≥90	3.4	17.1	29.9	49.6
Total	1.8	42.3	31.4	24.5

CONCLUSION

Prostate cancer does de-differentiate with age. Men over the age of 80 have a much greater proportion of poorly differentiated tumours and are more likely to have advanced disease. Should this drive more aggressive management for this population who may often receive no active therapy?

REFERENCES

1. Cumming et al. Br J Urol, 1990; 65(3): 271–4.
2. Brawn PN. Cancer, 1983; 52:246–251.

028

Prostate Cancer Staging Tables – a predictive nomogram for the UK

S.R.J. BOTT, M.R. SYDES and M.E. EMBERTON
St Helier Hospital, Carshalton, UK

INTRODUCTION

Accurate risk stratification is a pre-requisite to informed decision making when considering prostate cancer treatments. Most models are derived from cases managed in the USA. The validity of these methods may be compromised when used in a healthcare system other than that used for generating the predicted outcomes. We present predictive nomograms derived from the observed outcomes of men treated by radical prostatectomy (RP) in the UK.

METHODS

Using logistic regression a pilot study identified the best predictors of pathological stage from eight preoperative variables. All full BAUS members were asked to submit their consecutive RP patients' age, biopsy Gleason score, pre-operative PSA, number of biopsy cores, number of biopsy cores containing cancer (% positive cores) and pathological stage. Nomograms were constructed using this data to predict pT2, pT3a or pT3b/4/N1 disease after RP and validated using bootstrapping techniques.

RESULTS

A total of 1913 patients undergoing RP by 39 Consultant Urologists were included. Using multivariate analysis significant predictors of pathological stage were preoperative PSA ($P < 0.0001$), biopsy Gleason sum ($P < 0.0001$), % positive cores ($P < 0.0001$) and age ($P < 0.001$). Nomograms were constructed based on these variables.

CONCLUSIONS

These nomograms are derived from a large essentially unscreened cohort from across the country and reflect UK RP patients.

029

The natural history of conservatively managed prostate cancer

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INTRODUCTION

Management of clinically localized prostate cancer (PCa) remains controversial. Accurate separation of indolent PCa from aggressive disease is essential to avoid over-treatment. Therefore, we retrospectively investigated the natural history of PCa in an untreated population.

PATIENTS

Men diagnosed with clinically localized PCa, between 1990 and 1996 were identified using stringent inclusion criteria. The diagnostic Gleason score was recorded and revised as necessary after central review. Outcomes were determined through medical records, death certificates and cancer-registry data.

RESULTS

A total of 2,333 men were eligible. 71% were managed by watchful-waiting and 29% by hormone therapy. With a median follow-up of 9.73 years, 22% died from PCa, 28% died from other causes and 24% were alive but with evidence of progression. The revised Gleason score and PSA level at diagnosis were the most significant prognostic factors. The revised Gleason score was significantly better at predicting survival than the score assigned at diagnosis.

CONCLUSIONS

Gleason scoring using modern criteria and PSA are independent predictors of PCa mortality in clinically localised disease. Revised Gleason scoring is a more accurate method of assessing outcome than the initial scoring given at diagnosis and therefore pathological reassessment is vital in all retrospective series of prostate cancer.

030

Quality of life in men treated for early prostate cancer: a patient preference analysis comparing radical prostatectomy, conformal radiotherapy and brachytherapy

C.N. ANANDADAS ON BEHALF OF THE NORTH WEST URO-ONCOLOGY GROUP
Christie Hospital, Stepping Hill Hospital, Hope Hospital, Withington Hospital, Wigan Infirmary, Blackburn Infirmary and Leighton Hospital, Manchester, UK

INTRODUCTION

In 1997, a patient preference study was launched to investigate the treatment of early prostate cancer. Health-related quality of life (HRQOL) was compared between radical prostatectomy (RP), conformal radiotherapy (CRT) and brachytherapy (BT).

PATIENTS AND METHODS

A total of 430 men chose and received RP (n = 217), CRT (n = 161) and BT (n = 52). 354 (82%) completed pre-treatment SF36v2 and UCLA-PCI questionnaires. Change in QOL from baseline to 24 months (function and bother) was compared using Kruskall-Wallis.

RESULTS

Pre-treatment, the CRT cohort scored worse in physical function (P = 0.003) and general health perception (P = 0.002) compared with the other groups. At 24 months, bowel function was worse for CRT than RP patients (P = 0.001), but not worse than BT patients. Urinary function deteriorated most following RP (P < 0.001) but BT had the worst urinary bother scores (P = 0.015). Sexual function deteriorated most following RP and BT (P < 0.001). Percentages of patients able to have erections adequate for sexual activity (from baseline to 24 months respectively) were 66% to 29% for RP, 62% to 49% for CRT and 88% to 65% for BT.

CONCLUSION

This data demonstrates significant differences in HRQOL between RP, CRT and BT and should be available for men with early prostate cancer when making their treatment decisions.

031

Immediate or deferred androgen deprivation for patients with prostate cancer not suitable for local treatment with curative intent

P. WHELAN, U.E. STUDER, W. ALBRECHT, J. CASSELMAN and T. REIJKE, EORTC GENITOURINARY GROUP
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INTRODUCTION

This study attempted to demonstrate equivalent overall survival in patients with localized prostate cancer who were not suitable for local curative treatment and were treated with immediate or deferred androgen ablation.

PATIENTS AND METHODS

We randomized 985 patients with newly diagnosed prostate cancer T0-4 N0-2 M0 to receive androgen ablation with orchidectomy or the lutienizing hormone-releasing hormone (LHRH) analog (Buserelin 2-monthly depot) either immediately (493) or upon symptomatic disease progression or occurrence of life threatening complications (492).

RESULTS

Baseline characteristics were well balanced in the two groups. Median age was 73 years (range 52–81). At a median follow-up of 7.8 years 541 of the 985 patients had died, mostly from prostate cancer (193) or cardiovascular disease (185). The overall survival hazard ratio was 1.25 [95% CI: 1.05–1.48, *P* (non inferiority)>0.1] in favour of immediate treatment, seemingly due to fewer deaths of non-prostate cancer causes ($P = 0.06$). The time from randomization to progression of hormone refractory disease did not differ significantly, nor did prostate-cancer specific survival. The median time to the start of deferred treatment after study entry was 7 years. In this group 126 patients (25.6%) died without ever needing treatment (44% of the deaths in this arm).

CONCLUSION

Immediate androgen deprivation resulted in a modest but statistically significant increase in overall survival but no significant difference in prostate cancer mortality or symptom free survival. Deferring androgen ablation therapy may spare a substantial number of patients who remain asymptomatic and not die of prostate cancer or the side effect of such treatment.

Tuesday 27 June 1500–1615
Bladder Cancer
Chairmen: T. Christmas and M. Wallace

040

Impact of MDM on patient selection for Radical Cystectomy

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OBJECTIVES

To assess whether the Introduction of cancer Multi Disciplinary Meetings (MDM) influenced the selection of patients considered suitable for Radical Cystectomy (RC).

PATIENTS AND METHODS

This study was undertaken on 209 consecutive patients who underwent Radical Cystectomy for bladder cancer from 1990–2005. The cohort was divided in two groups: Group A: (Pre-MDM era 1990–2001) [$n = 132$] and Group B: (post-MDM era 2002–2005) [$n = 77$]. The two groups were compared for age, ASA status, surgical delay, salvage cystectomy rate, pathological staging, lymph positive disease, operative mortality and cancer specific survival.

RESULTS

Table 1 shows the comparative analysis. A higher proportion of patients had high stage and lymph node positive disease in Group B. Interestingly; the median time delay to surgery was higher in the post MDM group.

CONCLUSIONS

Our study demonstrates a significant change in patient selection for RC for bladder cancer, however, this may reflect an overall change of practice rather than the effect of MDM

TABLE 1: Patient selection before and after the inception of MDM

	Group A: (Pre-MDM)	Group B: (Post-MDM)
Median age	65 (range 38–87)	70 (range 39–85)
Age > 75 years	19%	26%
Salvage cystectomy rate	20%	1.2%
ASA status	ASA 1 = 17%	ASA 1 = 21%
	ASA 2 = 48%	ASA 2 = 49%
	ASA 3 = 35%	ASA 3 = 30%
Median time to surgery (delay)	40 days (range 10–180)	60 days (range 12–210)
Clinical Stage at the time of decision	≥cT2a = 30%, <cT2a = 70%	≥cT2a = 68%, <T2a = 32%
Pathological staging	≥pT2a = 46%	≥pT2a = 57%
Lymph node + disease	9%	27%
Operative mortality	4%	4%
Mean follow up	5.6 years (range: 6 months–16 years)	1.5 years (range: 3 months–4 years)
Cancer specific mortality	27%	23%

041

Evaluating the novel photosensitizer Hexvix® in photodynamic diagnosis of superficial bladder cancer

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INTRODUCTION

Photodynamic diagnosis (PDD) may improve transurethral resection of bladder tumour (TURBT) leading to reduced recurrence rates.

METHODS

Eighty eight patients enrolled into four studies of the photosensitizer Hexvix® since March 2005:

1. A randomised trial of PDD-assisted TURBT versus standard TURBT for new TCC (n = 49). Primary outcome was recurrence at three and 12 months.
2. Utility of PDD post-intravesical BCG (n = 16).
3. Investigation of positive urine cytology with previous negative evaluation (n = 9).
4. Treatment of multifocal TCC recurrence (n = 14).

RESULTS

A total of 49/52 (94%) eligible patients have been randomised. Colour contrast is excellent; 1/25 had failure of positive control fluorescence.

STUDY:

1. Additional pathology has been identified in 9/25(36%) randomised to 'blue light' including carcinoma-in-situ (n = 3), papillary tumour (n = 3), dysplasia (n = 2) and hyperplasia (n = 1). False positive biopsy rate was 27%. Recurrence data is not yet available.
2. Post-BCG 41% of fluorescence guided biopsies were positive for tumour. Additional pathology comprised: prostatic extension (n = 1) which altered management; and hyperplasia/dysplasia (n = 3).
3. Carcinoma-in-situ was identified in 2/9 (22%) patients.
4. Additional pathology was identified in 6/14 (43%) patients: papillary tumour (n = 2), carcinoma-*in-situ* (n = 2), and dysplasia/hyperplasia/squamous metaplasia (n = 3).

CONCLUSION

PDD using Hexvix® shows promise in improving the detection and treatment of superficial bladder cancer.

042

A prospective controlled comparison of urine cytology and the NMP22 BladderChek POC assay in the detection of urinary transitional cell carcinoma (TCC)

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INTRODUCTION

We prospectively evaluated VUC and the Matritech NMP22 BladderChek POC assay in their ability to detect urothelial TCC.

PATIENTS AND METHODS

This prospective controlled study comprised 148 patients. Patients in Group I (n = 58) had no cystoscopic/ radiological evidence of TCC, while those in Group II (n = 90) had confirmed TCC (76 new; 13 recurrent). VUC and NMP22 (nuclear matrix protein) status was checked prior to flexible cystoscopy. Antigen detection by anti-NMP22 antibodies resulted in a positive reading within 30 minutes.

RESULTS

Mean age (range) were 64.2 (33–88) years in Group I and 69.2 (36–89) years in Group II. In Group I, VUC was positive in 2 (3.6%) patients, while a false positive NMP22 result noted in 6 (10.3%) patients (One patient had a confirmed UTI). In the TCC Group II, 36 (40.4%) of patients had positive VUC, while 54 (60%) had a positive NMP22 result.

Diagnostic accuracy of NMP22 improved with increasing histological TCC grade – 18.1% in grade I disease, 60.5% in grade II, and 73.5% in grade III/ carcinoma in situ. Of 29 patients with positive VUC and NMP22, 27 (93.1%) had TCC (62.9% grade III disease).

	Vuc	Nmp22
Sensitivity	58%	60%
Specificity	95%	89.7%
Positive predictive value	94.7%	90%
Negative predictive value	59.4%	59.1%

CONCLUSIONS

The NMP22 BladderChek POC assay is cheaper and easier to use, but its diagnostic accuracy is not superior compared to VUC. Combining the two investigations will improve overall sensitivity, especially for high-grade disease.

043

Identification of bladder cancer urinary markers using proteomic technology

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OBJECTIVES

The discovery of new urinary markers for non-invasive detection and surveillance of bladder carcinoma remains an active field of current research with an aim to replace invasive investigations such as cystoscopy. We have analysed the urinary proteome of patients with bladder cancer and compared them to healthy volunteers to detect putative bladder cancer specific urinary markers.

METHODS

24-hour and midstream urine samples were collected from healthy volunteers and patients with newly diagnosed bladder cancer. Urinary proteins were isolated by a technique previously described by our group. Proteins were resolved by 1-dimensional (1-DE) and 2-dimensional gel electrophoresis (2-DE). The proteins that differed when analysed by either 1-DE or 2-DE between patients and controls were identified using peptide mass mapping.

RESULTS

Sixteen patients with newly diagnosed bladder cancer and five healthy volunteers acting as controls were investigated. All 16 patients had histological confirmation of superficial transitional cell carcinoma. For the same individual, no detectable differences were observed in the protein profiles of midstream and 24 h urinary samples when analysed by either 1DE or 2-DE. However, between patient and controls, a number of proteins differed in abundance and these were identified. Proteins that were present in patients, but absent in controls, included FK506 binding protein 6 isoform, apolipoprotein A-IV, paraliprotein and lipid binding protein.

CONCLUSION

There are no differences in the protein profile between midstream and 24-hour urinary samples, which has significant implications for future research. The novel biomarkers identified in the present study have been shown to be involved in critical biochemical and molecular events modulating carcinogenesis in urinary bladder.

044

The role of quantitative survivin mRNA expression in voided urine in the management of patients with bladder cancer

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*Departments of *Surgery (Division of Urology),†Biochemistry and‡Pathology, Faculty of Medicine, Kuwait University, Kuwait*

INTRODUCTION

To describe a real time reverse transcription-(RT- PCR) assay, based on TaqMan technology, for accurate and reproducible determination of survivin mRNA expression in voided urine samples of patients with various categories of transitional cell carcinoma (TCC) of the bladder.

PATIENTS AND METHODS

Survivin gene expression was quantified in pre-cystoscopy voided urine samples from the following groups of patients with:

Group A – no bladder cancer (healthy patients) (n = 35), Group B – newly diagnosed TCC of bladder (n = 43), Group C – recurrent TCC of bladder (n = 58) and Group D – TCC of bladder in remission (n = 41). Total RNA was purified and reverse transcribed into cDNA. Primers and TaqMan probes for the cDNA-specific real-time quantitative PCR assay were designed for survivin and GAPDH. The level of GAPDH expression was measured in all the samples to normalize for sample-to-sample differences in RNA input, quality, and reverse transcription efficiency.

RESULTS

Real-time measurement of normalized survivin expression was 99, 17 and 4.3-fold higher in groups B, C, and D patients respectively compared to group A patients.

CONCLUSION

These findings demonstrate that accurate quantitative measurement of survivin expression in voided urine has a potential to be a highly specific biomarker for TCC detection.

045

Robotic radical cystectomy for bladder cancer with at least 1 year oncologic and functional follow-up

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INTRODUCTION

Although open radical cystectomy (ORC) is the gold standard for muscle invasive bladder cancer it has significant morbidity and prolonged recovery. Only around 20 robotic radical cystectomies (RRC) have been reported world-wide.

PATIENTS AND METHODS

We report our evolution of RRC in 12 patients using the Da Vinci system with at least one year follow-up in five patients.

This involves posterior dissection, lateral pedicle control, anterior dissection, lymphadenectomy and ileal conduit diversion through a 5 cm midline or muscle splitting appendix incision. We initially used Weck clips for vascular control and subsequently a GIA stapler. Currently a second generation harmonic scalpel seems to be the most effective.

RESULTS

Median operating time was 390 min, robot docking time 7 min, blood loss 150 ml, morphine requirement 80 mg. Bowel function returned on day 1, hospital stay 12 days and full recovery 5 weeks. Major complications occurred in 16% but there were no deaths. Margins and lymph nodes were negative. After 1-year follow-up none have delayed complications or metastasis.

CONCLUSIONS

Although operating times are long RRC is minimally morbid with excellent outcomes at 1 year.

046

Radical Cystectomy in the elderly, is it worthwhile?

S. MASOOD, C. KOURIEFS, T. BHAT, T. FAZILI, M.K.M. SHERIFF and G.R. MUFTI
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INTRODUCTION

A significant number of patients with bladder cancer are elderly, and have a higher likelihood of death due to non-cancerous causes. This study evaluates the benefits of radical cystectomy in this group.

MATERIALS AND METHODS

From our database of 206 patients who underwent radical cystectomy for bladder cancer, we reviewed the data on those over 75 years of age for patient characteristics, pathological tumour stage, and overall and disease-specific survival rates.

RESULTS

The cohort comprised of 46 patients with a median age of 79 years. The pathological stage revealed no residual disease (T0) in 11%, CIS only in 9%, superficial bladder cancer in 27% and muscle invasive and locally advanced disease (≥pT2) in 53%. Perioperative (60 days) mortality was 4%. At a median follow-up of 33 months, the overall and cancer specific mortality rates were 39% and 27% respectively. At 5 years, the corresponding figures were 45% and 27% respectively.

CONCLUSION

Our results demonstrate low operative mortality and high cancer specific survival rates after radical cystectomy for bladder cancer in patients over 75. In the absence of specific contraindications these patients should be offered radical surgery.

047

Long term follow up of radiotherapy (radical or preoperative before cystectomy) for nonmetastatic locally advanced bladder cancer

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INTRODUCTION

The long-term outcome of radiotherapy with or without cystectomy during a 20 years period within a well-defined geographical area was analysed.

PATIENTS AND METHODS

A total of 1158 patients referred for radiotherapy 1969–1989 to Radiumhemmet Karolinska Hospital Stockholm Sweden, have been prospectively followed through 2004 (1–408 months).

RESULTS

Preoperative radiotherapy and cystectomy (438 patients): Cancer free survival, at 5, 10 and 15 years, was 68%, 61% and 59%. There were 158 cancer deaths (89 within 2 years) – Localised cancer: 37; Local and distant disease: 61; Distant disease only: 61. In 52/158 an autopsy was performed. Curative radiotherapy (720 patients): Cancer free survival, at 5, 10 and 15 years, was 25%, 15% and 13%. There were 567 cancer deaths (381 within 2 years) – Localised cancer: 294; Local and distant disease: 232; Distant disease only: 33. In 226/567 an autopsy was performed.

A complete clinical response was initially seen in 280/720 patients (39%). 167 of these recurred and 142 died of cancer.

CONCLUSIONS

Patients undergoing radiotherapy alone had a durable response in less than 1/5 (in spite of an initial complete clinical response in around 2/5) compared to a durable response of 3/5 in patients undergoing surgery.

Tuesday 27 June 1615-1700
Testis Cancer
Chairmen: T. Christmas and M. Wallace

051

Is it possible to predict the histology of testis cancer metastases after chemotherapy and potentially avoid RPLND?

A. YOUNG, P. SAVAGE and T.J. CHRISTMAS
Charing Cross Hospital, London, UK

INTRODUCTION

Between 15–45% of patients undergoing post-chemotherapy retro-peritoneal lymph node dissection (PC-RPLND) for metastatic testis cancer have necrosis/fibrosis only in the specimen and hence could be considered to have had unnecessary surgery. Our aim was to identify factors in the patients' case history that might enable us to make more precise selection for surgery.

PATIENTS AND METHODS

A series of 755 men underwent PC-RPLND between 1974 and 2005. A detailed database has been constructed including data on tumour markers, tumour volume, post-chemotherapy rate of marker change, post-chemotherapy rate of reduction in tumour size and radiologic characteristics of the tumour mass. A complex multi-variate analysis of this data is being undertaken.

RESULTS

The data from the 755 men who have undergone PC-RPLND is currently under analysis and will be ready for presentation at the meeting.

CONCLUSIONS

We have utilised complex statistical techniques in a large cohort of men undergoing PC-RPLND in order to try and identify if there are any criteria that can be used to predict the histology of the residual mass.

052

Long-term outcome after post-chemotherapy retro-peritoneal lymph dissection for active testis cancer

T.J. CHRISTMAS, P. SAVAGE and R. HUDDART
Charing Cross and The Royal Marsden Hospitals, London, UK

INTRODUCTION

The worse prognostic group of patients with testis cancer are those with active tumour within the post-chemotherapy retro-peritoneal lymph node dissection (PC-RPLND) specimen. We have examined how these patients fare after surgery and further chemotherapy and /or radiotherapy in the long term.

PATIENTS AND METHODS

Out of a series of 345 men undergoing PC-RPLND between 1993 and 2005 a total of 86 (24%) had active tumour within the resected specimen. The histology of this was active teratoma in 41, yolk sac tumour in 12, seminoma in 10, choriocarcinoma in 1, carcinoma in 12 and sarcoma in 10.

RESULTS

A total of 8 patients with active tumour have died of recurrent disease – four (9%) of teratomas, two (17%) with carcinoma, one (10%) with seminoma and one (10%) with sarcoma.

CONCLUSIONS

Although this group of patients has a worse prognosis than other patients undergoing PC-RPLND the surgery still has good results. There is also the option of further chemotherapy and radiotherapy to the operative field after RPLND.

053

Angiogenesis and lymphangiogenesis in testicular germ cell tumours (TGCT)

P. KUMAR, S.I. BAITHUN, R.T.D. OLIVER and V.H. NARGUND
St Bartholomew's Hospital and Queen Mary, Barts and the London School of Medicine and Dentistry, London, UK

INTRODUCTION

TGCT readily metastasize to the lymphatics but there is little in the literature about the role of lymphangiogenesis. We aimed to study novel lymphatic markers in TGCT.

METHODS

We used archival paraffin-embedded tissue from 34 cases of stage I TGCT and 10 controls. Immunohistochemical staining was performed for the lymphatic-specific markers podoplanin, flt-4, LYVE-1 and the angiogenic marker CD31. Image analysis software (KS400 Zeiss) quantified staining separately in both the tumour and the periphery of the tumour.

RESULTS

Intratumoral staining for CD31, podoplanin, flt-4 and LYVE-1 was significantly higher versus control tissue (P = 0.0032, 0.0002, 0.0035, 0.0007 respectively). Similarly, the tumour periphery counts were also significantly higher for each respective marker versus controls (P = 0.0013, 0.0002, <0.0001, 0.0044). CD31 and podoplanin counts were higher in the tumour periphery than intratumorally (P = 0.0038, 0.0005).

DISCUSSION

Increased microvessel density (MVD) and lymphatic vessel density (LVD) suggests that angiogenesis and lymphangiogenesis are implicated in the tumour biology of TGCT. Our study demonstrated intratumoural lymphatics suggesting their possible role in lymphangiogenesis. Furthermore, increased MVD and LVD peripherally may represent an 'expanding front' with neoangiogenesis and neolymphangiogensis occurring there with continued tumour growth.

054

Histological findings in HIV positive patients with indeterminate testicular lesions

F. SODEN, S. MINHAS, C. ALLEN, A.A. FREEMAN and D.J. RALPH
University College Hospital, London, UK

INTRODUCTION

Patients with retroviral infection are at increased risk of germ cell tumours, lymphoma and infections, often with atypical pathogens. In a young man with retroviral infection and solid lesion on testicular imaging, the differential diagnosis includes all above conditions. Furthermore, risk of infection to staff precludes the use of intraoperative frozen section.

METHODS

We report three patients aged 42–56 years with retroviral infection, presenting to our hospital since 2000, with symptoms of testicular pain or palpable mass. Imaging showed indeterminate hypoechoic intratesticular lesions and the patients elected for radical orchiectomy.

RESULTS

All three patients were found to have inflammatory lesions of the testis, with no evidence of lymphoma or germ cell tumour. No specific pathogen was identified with histochemical stains.

CONCLUSION

In the absence of frozen section examination, diagnosis of a solid intratesticular mass in a patient with retroviral infection may be difficult. These patients are at increased risk of inflammatory and neoplastic lesions and imaging cannot reliably distinguish between these. Possible diagnostic options include open exploration through an inguinal approach in a draped field or pre-operative percutaneous needle biopsy. With the increasing incidence of retroviral infection, this clinical scenario may become more commonplace and merits further consideration.

Wednesday 28 June 0930–1045
Upper Tract Disorders
Chairmen: R. Brough and A. Joyce

060

Upper urinary tract ureterorenoscopy in patients with abnormal upper urinary tract cytology: how useful is this when upper urinary tract imaging is reported as normal?

P.E. KEEGAN, V. WADERHRA, P. HASLAM and S.T. HASAN
Freeman Hospital, Newcastle-upon-Tyne, UK

INTRODUCTION

The role of upper urinary tract ureterorenoscopy (UUT URS) and biopsy is well established to obtain a histological diagnosis prior to definitive surgical management. When UUT imaging is normal the role of UUT URS to investigate abnormal cytology results is less clear.

PATIENTS AND METHODS

A comprehensive study of all patients at our institution in whom UUT cytology had been requested in 2005.

RESULTS

Fifty-three UUT cytology samples were collected from 42 patients between January and September 2005. Thirty samples from 25 patients were reported as showing cytological atypia, suspicious of malignancy or carcinoma. In these 25 patients with abnormal cytology, preoperative imaging was reported as definitely abnormal in 10 patients. In the 15 patients with abnormal cytology but normal imaging, subsequent ureteroscopic biopsy confirmed malignancy in only one patient. Furthermore in five patients with normal imaging and persistently abnormal cytology, repeat ureteroscopy failed to diagnose any UUT TCC.

CONCLUSION

The diagnostic yield of UUT URS in the presence of abnormal UUT cytology and normal imaging is low with only 1 of 15 patients in our series having biopsy confirmed malignancy. On going studies will identify patients in whom this investigation could be avoided.

061

Can we accurately predict the stage and the grade of upper tract transitional cell carcinoma?

S. SHAIKH, G. NABI, P. THORPE and S. McCLINTON
Aberdeen Academic and Clinical Urological Surgeons (ABACUS) Research Group, Aberdeen Royal Infirmary, Aberdeen, UK

INTRODUCTION AND OBJECTIVES

In patients with upper tract urothelial tumours the best management option requires information on grade and stage. In the present study, we correlate the preoperative clinical, radiological and ureteroscopic findings with the final histopathology of nephroureterectomy specimens.

MATERIALS AND METHODS

The records of consecutive patients who underwent radical nephroureterectomy between 2003 and 2005 were reviewed. Information on clinical, radiological, ureteroscopic and final histopathological findings were recorded. All patients had CT staging using a multi-slice CT scanner.

RESULTS

There were 27 patients with a mean age of 60.2 years (range 54–76). Haematuria was the main clinical presentation in nineteen patients (70%). There were 16 renal tumours and 11 ureteric tumours at various levels. Voided urinary cytology was positive in nine patients and six of these patients were shown to have extensive carcinoma in-situ on final histopathological examination. The majority of the tumours were high grade and high stage on final histopathological examination [pTaG2 (9), pT1G2-G3 (3), pT3G3 (15)]. Prenephrectomy ureteroscopic examination in 10 patients had shown tight ureteric strictures in five and polypoidal lesions in the remaining. All patients with strictures on ureteroscopy had high grade and high stage tumours. Radiological investigations alone missed two renal and four ureteric tumours, subsequently diagnosed by flexible ureteroscopy.

CONCLUSIONS

Radiological investigations alone significantly under stage upper tract urothelial tumours. The presence of stricture on ureteroscopy correlates with high stage tumours and patients with positive urinary cytology often have extensive carcinoma-in-situ.

062

Upper urinary tract transitional cell carcinoma laser ablation: palliative or curative?

P.E. KEEGAN, D.A. RIX, D.J. THOMAS and S.T. HASAN
Freeman Hospital, Newcastle-upon-Tyne, UK

INTRODUCTION

Endourological management of upper urinary tract transitional cell carcinoma (UUT TCC) has been shown to be safe and feasible in selected patients. This study examined the patient characteristics and cancer outcome in patients who had received laser ablation of UUT TCC.

PATIENTS AND METHODS

Eighteen patients were identified who had UUT TCC treated with laser ablation. Patient and tumour characteristics were determined in addition to the outcome of subsequent ureterscopic follow up and treatment. Study end points included progression beyond laser control, progression free survival and overall survival.

RESULTS

Laser ablation was performed in the distal ureter in 9 of 11 patients with available follow up. Progression beyond laser control occurred in 4 of 11 patients. At 2 years from first laser treatment only 3 of 11 patients in this series were both alive and had tumours that had not progressed beyond laser control. Median progression free survival was 24 months (range 1–56). Median overall survival was 26 months (range 1–127).

CONCLUSION

Laser ablation of UUT TCC may be viewed as palliative treatment in the majority of patients. A higher reported curative rate within the literature may result from case selection differences.

063

Percutaneous nephrostomy in the management of refractory loin pain due to pregnancy induced hydronephrosis

F. THOMAS, H. JOSHI, S. IRVING and N. BURGESS
Norfolk and Norwich University Hospital NHS Trust, Norwich, UK

INTRODUCTION

Intractable loin pain due to pregnancy induced (non-calculus) hydronephrosis is a rare, but, challenging problem that needs multidisciplinary approach. Percutaneous nephrostomy (PCN) can be a valid treatment option in our experience.

PATIENTS AND METHODS

Records of all pregnant patients registered at the institution from 1996–2005 (n = 48 518), with symptomatic pregnancy induced hydronephrosis were reviewed. The symptoms, investigations and management including feto-maternal outcomes were evaluated.

RESULTS

Forty-eight patients with symptomatic hydronephrosis required admission. 21 patients necessitated PCN (n = 24). 74% were primi-gravida with right side affected in (90%). Mean patient age was 25 years and the mean gestational age was 28 weeks when PCN inserted. All patients underwent USS of renal tract with additional IVU in 78%. A mean of 4 days trial of opiod analgesics was received before PCN insertion. PCN resulted in lasting pain relief without analgesia in 84%. In all patients the delivery could be prolonged to term (mean 36 weeks) with satisfactory feto-maternal outcomes. 63% had minor complications requiring medical help, with blocked tube (54%), infection (26%) and leaks (18%). PCN removal was uneventful post- partum, and there was complete resolution of hydronephrosis on follow up.

CONCLUSION

Percutaneous nephrostomy is a safe and reliable option in managing intractable loin pain due to hydronephrosis and offers good pain relief with prolongation of the pregnancy until term. The frequent minor complications require close care and support.

064

Comparison of laparoscopic and open pyeloplasty for pelvi-ureteric junction obstruction

M.M. MORSY, B. ZELHOF, R.C. CALVERT and N.A. BURGESS
Norfolk & Norwich University Hospital NHS Trust, Norwich, UK

INTRODUCTION

We compared the morbidity and outcome of laparoscopic transperitoneal dismembered pyeloplasty (including the learning curve) with historical open controls in one centre.

PATIENTS AND METHODS

Retrospective case note review of all 48 laparoscopic pyeloplasties (2000–2005) and 51 open pyeloplasties (1992–2003).

RESULTS

The mean age in each group was 36 years. Mean follow up was 10 months (laparoscopy) and 19 months (open). Laparoscopic procedures were associated with longer mean operating times (159 min vs. 91 min, $P < 0.001$), shorter mean time to normal diet (38 h vs. 72 h, $P < 0.001$) and similar mean hospital stays (5 days, $P = 0.6$) compared to open procedures. Open conversion rate was 5% for primary laparoscopic procedures but 71% for secondary procedures. Operative complication rates were 17% for primary laparoscopic pyeloplasties, 57% for secondary laparoscopic procedures and 27% for open pyeloplasties. The success rates for primary and secondary procedures were 100% (41/41) and 43% (3/7) for laparoscopy and 96% (46/48) and 67% (2/3) for open surgery. Failed procedures had persisting loin pain or obstruction. At 6 months follow up 30% of open patients but no laparoscopic patients complained of wound pain.

CONCLUSIONS

Laparoscopic pyeloplasty has equivalent efficacy to open pyeloplasty with less wound pain at 6 months. Outcome of secondary procedures is inferior.

065

Laparoscopic pyeloplasty: evolution of a new gold standard

J. OOI, A. RICHARDS and C. EDEN
North Hampshire Hospital, Basingstoke, UK

INTRODUCTION

We report our series of laparoscopic dismembered pyeloplasty for the treatment of primary and secondary uretero-pelvic junction (UPJ) obstruction.

PATIENTS AND METHODS

A total of 170 consecutive cases of laparoscopic pyeloplasty (156 primary and 14 secondary) were performed or supervised by a single surgeon. A four port extraperitoneal approach was used in all but three cases.

RESULTS

The median operative time was 140 (range 58–290) minutes. The complication rate was 7.1% and conversion rate was 0.6% with no conversions in the last 161 cases. The median postoperative hospitalisation was 3 (range 2–14) nights. The ureter was transposed ventral to a crossing vessel in 42% of cases and a separate renal pelvic suture line used in 45%. 9/11 (82%) patients were rendered stone-free. The success rates for primary and secondary pyeloplasty were 97.2% and 84.6% after a median follow-up of 12 and 20 months, respectively.

CONCLUSION

Laparoscopic dismembered pyeloplasty is applicable to all patients with UPJ obstruction and produces results which are at least as good as those following open surgery but with the advantages of a minimally invasive procedure. Laparoscopic pyeloplasty is moving rapidly towards becoming the gold standard in treatment of UPJ obstruction.

066

Laparoscopic transperitoneal dismembered pyeloplasty: long term outcome

D. VIJAYANAND, T. HASAN, D.A. RIX and N.A. SOOMRO
Freeman Hospital, Newcastle-upon-Tyne, UK

INTRODUCTION

Laparoscopic pyeloplasty has become a standard treatment for pelviureteric junction (PUJ) obstruction. However data regarding its long-term outcome is scarce. We present our series of laparoscopic transperitoneal dismembered pyeloplasty and its long-term outcome.

PATIENTS AND METHODS

From April 2001 to March 2004, 70 consecutive patients (36 M/34 F) underwent laparoscopic dismembered pyeloplasty in our centre. All patients were symptomatic and had radiologically proven PUJ obstruction. The outcome was assessed both clinically and by renogram at 3, 12 months following reconstruction and then once every year.

RESULTS

Lower pole vessels were observed in 38 (54.3%) patients. The average hospital stay was 3.3 days (2–16). Postoperative complications were recorded in 4 (5.7%) patients. Successful outcome was achieved in 68 (97.1%) patients with a mean follow up of 24.1 (6–48) months. There were no open conversions.

Mean age	39.1 years
% Right/Left	51/49
Mean operative time	160.5 min
Mean blood loss	77.8 ml
% complications	5.7
Mean postop hospital stay	3.3 days
Mean follow up	24.1 months
% success	97.1

CONCLUSIONS

Laparoscopic dismembered pyeloplasty has become a standard procedure with reliable long-term outcome.

Wednesday 28 June 1500–1600
New Technology in Prostate Cancer
Chairmen: D. Gillatt and D. Greene

090

Laparoscopic radical prostatectomy (LRP) – a training model (Results of the first 100 procedures performed by a single surgeon)

D. HODGSON, B. RAYCHAUDHURI and D.J. CAHILL
Guys Hospital, Guys & St. Thomas' NHS Trust, London, UK

INTRODUCTION

Complex laparoscopy is difficult to start (initial operating times of over 10 h in some series). Various models have been described for training laparoscopic surgeons. We report the results of a single surgeon's first 100 cases.

METHODS

The third author spent 60 h on a lap-trainer, assisted 80 and was mentored for the first four, before performing the first procedure independently in April 2003. Prospective data collected includes operative time, blood loss, complications, continence recovery and positive margins status.

RESULTS

We have not found a learning curve in terms of the operating time (mean for 1st 25–188 min, 2nd–201 min, 3rd–179 min, 4th–187 min) or mean blood loss (330 ml). However, the incidence of positive margins has decreased in the last 50 cases (13% vs. 26%), as has the complication rate (12% vs. 24%) whilst the continence outcome has improved (28% immediate continence vs. 16%).

CONCLUSION

Complex laparoscopic techniques can be learnt as an assistant and in the dry lab, as opposed to 'on the job'. Nuances of specific techniques are the second – separate - element to the learning curve, demonstrated by functional and pathological parameters.

091

Complications of laparoscopic radical prostatectomy. A prospective reference, not a forgotten secret

B. RAYCHAUDHURI, D. HODGSON and D.J. CAHILL
Guys & St. Thomas' Hospitals NHS Trust, London, UK

INTRODUCTION

We describe the management of complications seen in the first 100 Laparoscopic Radical Prostatectomies in our department. Complications and their management are relatively under reported in the literature, yet this information is invaluable to the surgeon in trouble! The information needs to be a ready reference not an embarrassed secret.

METHODS

Prospective data has been kept on all complications of Laparoscopic Radical Prostatectomy in this department.

RESULTS

The principle complications included rectal injuries (2), pelvic haematomas (5) and urinary leakage (4). Rectal injuries may be managed with primary closure if identified, without colostomy, or, if missed, by colostomy and pelvic drainage. Pelvic haematomas and urinary leakage are managed conservatively. Interestingly, every patient having an excessive opioid analgesic requirement post-op had a significant complication- a laparoscopic 'clinical sign'. We offer our input as to the management of these and other complications (total = 20% of cases).

CONCLUSIONS

Our complication rates are equivalent to those in published series. These managed complications have not resulted in residual disability from the event, suggesting the management to be appropriate.

092

Urinary continence and erectile function results 1 year following Robotic Assisted Radical Prostatectomy

P.J. O'MALLEY, F. BRUYERE, H. KHAIRA, H. CROWE and PROF.A. COSTELLO
Royal Melbourne Hospital, Melbourne, Australia

OBJECTIVE

To determine the timing to achieve urinary continence and erectile function following Robotic Assisted Radical Prostatectomy (RARP).

MATERIAL AND METHODS

A prospective analysis of all RARP with more than 1-year follow up was undertaken. Urinary continence and sexual function were assessed via patient completed questionnaires at 3, 6 and 12 months post-operatively. Continence was defined as the use of no pads. Pre-operative and post-operative erectile function was assessed using the Sexual Health Inventory for Men (SHIM) questionnaire .For all evaluations the level of significance was set at $P < 0.05$.

RESULTS

CONCLUSION

In our initial 120 cases of RARP, we found a 1 year 95.5% continence rate and 30% potency rate, using a rigorous definition with SHIM score more than 21.

Months Post-op	Never leak (%)	Almost never leak (%)	Sometimes leak (%)	Always leak (%)	No pad usage (%)	0–1 pad usage (%)
3 (n = 104)	15.3	20.2	43.2	15.3	34.6	72.1
6 (n = 100)	22.2	34.8	33.6	8.4	56.8	87.3
12 (n = 89)	36	29.3	28	6.7	71.9	95.5
Months Post-op	Mean SHIM score	No spontaneous erection (%)	Spontaneous partial Erection (%)	Therapeutic agents (%)		
3 (n = 91)	6.7 (5–23)	75.8	17.6	50.5		
6 (n = 85)	6.79 (5–25)	74.1	16.5	65.9		
12 (n = 100)	7.85 (5–24)	60	21	69		

093

Salvage cryotherapy for recurrent prostate cancer after radiation failure: the first 100 patients

M. ISMAIL, S. AHMED and J. DAVIES
Royal Surrey County Hospital and St Lukes Cancer Centre, Guildford, UK

INTRODUCTION

In this study we report our experience evaluating the biochemical outcome and complications after salvage cryotherapy of the prostate.

MATERIALS AND METHODS

Between May 2000 and November 2005, 100 patients underwent salvage cryoablation of the prostate. The mean follow-up was 21.6 months (range 3–67 months). The mean age was 67 years (range 54–78 years). All patients had biopsy proven recurrent prostate cancer. Two cryotherapy systems were used, Cryocare $n = 45$ and Seednet $n = 55$. Biochemical recurrence free survival was defined as PSA level < 0.5 ng/ml. Patients were stratified into three risk groups according to the following factors: PSA level, Gleason score and clinical stage.

RESULTS

There were no operative or cancer related mortalities. Sixty-one patients received hormonal therapy prior to their cryosurgery. Cumulative biochemical recurrence free survival was 71% at 12 months, and 55% at 24 months. Five patients had redo cryosurgery. Complications included incontinence (11%). Erectile dysfunction (87%), lower urinary tract symptoms (15.5%), prolonged perineal pain (4%), urinary retention (2%) and rectovesical fistula (1%).

CONCLUSIONS

Our data supports the safety and efficacy of salvage cryotherapy with low morbidity rates. Cryosurgery should be considered as a therapeutic option in selected group of patients with localised recurrent prostate cancer.

094

To what extent does PSA Nadir predict subsequent treatment failure following trans-rectal HIFU for presumed localized adenocarcinoma of the prostate?

T. UCHIDA, R.O. ILLING, P. CATHCART, T.K. ALFRED and M. EMBERTON
Tokai University Hachioji Hospital (Uchida), The Institute of Urology and Nephrology, University College Hospital (Illing, Emberton) Clinical Effectiveness Unit, The Royal College of Surgeons of England (Illing, Cathcart, Alfred, Emberton), Tokyo/ London, Japan

INTRODUCTION

We explore the association between PSA nadir and residual disease in patients undergoing trans-rectal High Intensity Focused Ultrasound (HIFU) therapy for presumed localized prostate cancer.

METHODS

Between 1999 and 2005, 141 treatments were performed using the Sonablate device (Focus Surgery, IN, USA). None received hormone therapy prior to HIFU. All men underwent trans-rectal biopsy at 6 months. Patients were grouped into five categories (1–5 respectively) according to PSA nadir; 0.00–0.07, 0.08–0.29, 0.30–0.79, 0.80–1.99 and >2.00 ng/l. The proportion of men with residual disease on prostate biopsy was calculated for each category.

RESULTS

The mean age was 70 (SD 7.0), mean T stage 1 (1–3), mean PSA 10.8 (SD 8.3), mean Gleason score 6.0 (SD 1.3). There were no statistical differences between the groups. Higher PSA nadirs following treatment were significantly associated with an increased risk of a positive biopsy; the proportion of positive biopsies by group were 1: 11.0%, 2: 16.7%, 3: 38.5%, 4: 40.0%, 5: 65.5% ($P = 0.003$).

CONCLUSIONS

A clear and intuitive association between PSA nadir and the risk of treatment failure exists for HIFU. These data can be used to predict the risk of residual disease in patients with prostate cancer undergoing HIFU therapy.

095

Acute normovolaemic haemodilution reduces transfusion requirement in radical retropubic prostatectomy

A.R. RAMSDEN, S. BATISTICH, M. CLARKE and A.W. WEDDERBURN
Royal Bournemouth Hospital, Bournemouth, UK

INTRODUCTION

Radical Retropubic Prostatectomy (RRP) is a major surgical procedure with a high requirement for blood transfusion. A reduction in allogenic blood transfusion confers cost benefits and reduces the chance of haematological and immunological complications. Autologous transfusion is not widely used in RRP (21.4%).

METHODS

A total of 126 patients underwent RRP by three surgeons between January 2002 and July 2005. One surgeon introduced ANH in November 2002 with 34 patients undergoing ANH. There were 92 patients in the non-ANH group (n = 14, 28 and 50 respectively). These patients had 600 ml whole blood passively removed pre-operatively whilst 2000 ml crystalloid was simultaneously infused. Blood was reinfused at the end of the procedure or at the anaesthetist's discretion. The trigger for perioperative allogenic blood transfusion was ≤8 g/l. Patients who were fit for RRP were considered to be fit for ANH.

RESULTS

The transfusion rate in the non-ANH and ANH groups were 50.3% and 6% respectively ($P \leq 0.05$). There was no significant difference in the transfusion rates of the three surgeons in the non-ANH group.

CONCLUSION

This small retrospective study demonstrates a significant reduction in allogenic transfusion requirement in patients undergoing ANH at the time of RRP. A larger prospective randomised trial is required to support these findings.

Wednesday 28 June 1600–1700
Translational Research
Chairmen: M. Bishop and D. Rosario

102

Undiagnosed urine infection and overactive bladder: our experience in 670 patients

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

INTRODUCTION

The study hypothesis was that by using accurate measurement methods urinary infection would be found as a significant pathology in patients presenting with overactive bladder.

PATIENTS AND METHODS

This was a study of 670 patients (415 females and 255 males) presenting with overactive bladder symptoms without dysuria. Their mean age was 54 (SD = 20). Midstream urine samples were collected and tested by dipstick for leucocyte esterase, by light microscopy using a haemocytometer to count the pyuria and by quantitative laboratory culture.

RESULTS

A total of 164 (25%) specimens were negative in all three tests. Pyuria, detected by haemocytometer (≥10 WBC/mm^3) was positive in 405 (60%). Of these 405 patients, 325 (80%) demonstrated a positive leucocyte esterase if a 'Trace' result was taken as positive, but 248 (61%) if a 'Trace' result was rejected. On urine culture 113 (28%) out of 405 demonstrated positive results. The comparisons of 24-hour frequency and incontinence episodes demonstrated marked symptomatic differences between those testing positive and negative using haemocytometer (Frequency: F = 8.7, df: 2, P = 0.003: Incontinence: F = 4.0, df: 2, P = 0.05) and Leucocyte esterase (Frequency: F = 11.6, df: 2, p = 0.001: Incontinence: F = 7.8.0, df: 2, P = 0.005).

CONCLUSION

Significant urine infection in the presence of overactive bladder symptoms without dysuria may be much more prevalent than urine culture and dipstick results might suggest.

103

Polymerase chain reaction (PCR) based detection of helicobacter species in bladder biopsies of patients with interstitial cystitis

F. ANJUM, I.S. SHERGILL, S.A. CHISHOLM, R.J. OWEN, E.L. TEARE and H. LEWI
Broomfield Hospital, Chelmsford, UK

OBJECTIVE

We tested the hypothesis that *Helicobacter* species are present in the bladder and are associated with Interstitial Cystitis (IC).

PATIENTS AND METHODS

A prospective control study was performed in 10 patients with IC and 17 control patients. Urine and bladder biopsies were cultured for *Helicobacter pylori* and other fastidious and non-fastidious bacteria. DNA was extracted and tested by four different PCR assays (two *Helicobacter* genus-specific and two *Helicobacter pylori*-specific). *Helicobacter pylori* status was determined for each patient by serological testing.

RESULTS

Bladder biopsies from six patients (60%) in the IC group, and eight (47%) controls were positive in at least one PCR detection assay. Three patients were positive by one or both of the *Helicobacter pylori* specific assays and the remaining patients by one or both of the genus-specific assays. One patient from the IC group and one from the control group was *Helicobacter pylori* seropositive. Urine and bladder biopsies were negative by conventional culture for *Helicobacter* species.

CONCLUSION

This is the first study in which *Helicobacter* species DNA has been detected in the human bladder. Although not significant in this small study, there is a trend towards greater numbers of *Helicobacter* species positive patients in the IC group.

104

Short-term standard urethral catheter associated urinary infection – are antimicrobial-coated catheters a viable alternative?

S. SHAIKH, G. NABI, S. WONG, T. LAM, R. PICKARD and J. N'DOW
Aberdeen Academic and Clinical Urological Surgeons (ABACUS) Research Group, Aberdeen Royal Infirmary, Aberdeen and Freeman Hospital, Newcastle-upon-Tyne, UK

OBJECTIVE

Urinary tract infections (UTI) are one of the commonest nosocomial infections accounting for approximately 20–40% of all hospital acquired infections and 80% of these are associated with the use of urinary catheters.[1] A multicentric prospective audit of hospital based short-term catheter policies was carried out to find out the incidence of catheter related urinary tract infections.

METHODS

A one-week audit was conducted in two hospitals (Aberdeen Royal Infirmary and Freeman Hospital, Newcastle). The indications for catheterisation, type (material and type of coating), size, duration of catheterisation, number of attempts, antibiotic prophylaxis and finally episodes of catheter-related urinary infections were recorded.

RESULTS

There were 148 urethral catheterisation episodes during the audit period. Catheterisation was most commonly carried out for monitoring urine output. The mean estimated duration of catheterisation was 3 days (range 1–14 days). Polytetrafluoroethylene-coated (PTFE) latex catheters were most commonly used (74%). Antibiotic prophylaxis was used in 39%, while 20% of patients were already on concurrent antibiotics at the time of catheterisation. Catheter-related sepsis was clinically documented in 29(20%) cases, of which 17(11%) had culture-positive urinary infections.

CONCLUSIONS

There is a high incidence of catheter-related sepsis and symptomatic urinary tract infection using standard short-term PTFE-coated catheters. Well-designed randomised control trials are urgently required to explore the clinical and cost effectiveness of antimicrobial/antiseptic impregnated catheter use.

REFERENCE

1. Brosnahan J *et al.* Types of urethral catheters for management of short-term voiding problems in hospitalised adults. Cochrane Database Syst Rev. 2004;(1): CD004013.

105

Reduced temperature washout fluids hinder penile detumescence in a model of ischaemic priapism

P. KUMAR, C.H. FRY, P.D. KELL, D.J. RALPH and S. MINHAS
Institute of Urology, London, UK

INTRODUCTION

Corporal washout, with cold or room temperature fluids, is recommended to treat ischaemic priapism. However, the effect of lowering local temperature on corporal smooth muscle (CSM) function is unknown: this study aimed to characterise this condition.

MATERIALS AND METHODS

Guinea-pig CSM strips were superfused with a HCO_3-/CO_2 buffered solution at 37°C (pHe7.39) followed by room (21°C, pHe7.20), or fridge temperature (4°C, pHe7.00). Isometric contractures to 15 μMphenylephrine (PE) and subsequent relaxations to 1 μM carbachol were recorded. Nerve-mediated contractions, and relaxations of pre-contracted strips, were elicited by electrical field stimulation (EFS, sensitive to 1μM tetrodotoxin). Responses were compared to acidosis (pHe6.99) at 37°C. Data are mean ± S.D.; significance tests ($P < 0.05$) used Student's *t*-test.

RESULTS

Nerve-mediated contractions (EFS60Hz) were significantly and reversibly reduced after 30 min at 21°C and 8°C (44 ± 9%; 37 ± 6%, respectively). The time-constant (τ) for contractions to return to baseline was significantly prolonged at low temperature (5.5 ± 0.7 s → 9.9 ± 3.0 s). EFS24Hz relaxed pre-contracted strips by 41 ± 21% of the preceding PE-contracture at 37°C.This relaxation was unchanged at 60 min of reduced temperature; however, τ was prolonged (65 ± 14 s → 125 ± 33 s). Low temperature had no significant effect on the magnitude of PE-contractures or carbachol relaxations; τ was again prolonged (270 ± 41 s → 435 ± 98 s). Acidosis had no significant effect on nerve-mediated or agonist-induced responses after 60 min.

CONCLUSION

Low temperature suppresses nerve-mediated contraction, but spares nerve-mediated relaxations; furthermore, contractile and relaxatory responses are slowed. Thus, washout with body temperature fluids will optimise penile detumescence.

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Role of heat shock protein 25 in calcium oxalate urolithiasis

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INTRODUCTION

Urolithiasis is a pro-oxidant disease. Calcium oxalate monohydrate (COM) stressed renal cells generate damaging reactive oxygen species (ROS). The resulting cellular injury is a critical initiator in stone formation. Small heat shock proteins (HSP 25/HO-1) protect against damage generated by environmental challenges. Is this antioxidant protection lost in COM urolithiasis?

MATERIALS AND METHODS

Confluent monolayers of canine distal tubule cells (MDCK) were heat shocked (42°C for 1 h) then 20 h later exposed to COM (28 μg/cm^2) Superoxide (O2–) was measured using lucigenin enhanced chemiluminescence and HSP 25 and Heme-oxgenase (HO-1) expression was evaluated by SDS-PAGE western blot analysis.

RESULTS

HSP25 induction inhibited the COM induced increase in mitochondrial O2- production in MDCK cells ($P < 0.05$). Exposure to COM stress after heat shock inhibited upregulation of HSP25 whilst no effect was apparent with free oxalate. HSP25 inhibition is COM specific as expression of another stress related protein HO-1 was unaffected.

CONCLUSIONS

Calcium oxalate monohydrate mediated increases in ROS in MDCK cells is significantly ameliorated by prior HSP25 upregulation. Furthermore, COM inhibited upregulation specifically of HSP25, suggests that COM induced ROS damage is unable to benefit from HSP25 associated physiological resistance. Therapeutic targeting of HSP25 expression is thus implicated in abrogating stone formation.

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Effects of hyperoxaluria and crystalluria on mitochondrial function in two animal models of stone disease

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INTRODUCTION

Calcium oxalate stone disease is a multifactorial disease in which cell injury, oxidative damage and mitochondrial perturbations are believed to be involved. *In vitro* exposure to oxalate crystals results in the generation of mitochondrial superoxide. The objective of this study was to determine if stone disease *in vivo* exhibits similar perturbations.

MATERIALS AND METHODS

An oxalate direct model (subcutaneous osmotic pumps, OP), or indirect model (ethylene glycol and 1,25-dihroxycalcitriol) was employed to initiate hyperoxaluria and/or crystalluria. Oxygen consumption in mitochondria (complex-I or -II substrates) measured state IV respiration (ADP limited), and state III respiration after addition of ADP.

RESULTS

Oxygen consumption in kidney mitochondria of the crystalluria animals was markedly decreased (60–80%, $P < 0.005$) at 1–3 weeks. The hyperoxaluria group was unchanged from control. In the OP model (mild crystalluria) the pattern is different with a decreased ratio of state III to state IV respiration.

CONCLUSION

These studies show that severe crystalluria results in extreme mitochondrial dysfunction. Hyperoxaluria with minor crystalluria result in a decrease in the ratio of state III to state IV respiration. This disruption in electron flow may be involved in electron leakage leading to superoxide formation (oxidative injury), and linked to crystal-cell adhesion and stone formation.

Thursday 29 June 0930–1045
Reconstructive Surgery
Chairmen: I. Eardley and T. Mundy

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Core-through urethrotomy using the Holmium Laser for obliterative urethral strictures after traumatic urethral disruption and/or distraction defects: long-term outcome

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INTRODUCTION AND OBJECTIVE

To assess the feasibility, efficacy and long-term outcome of holmium laser core-through urethrotomy for posttraumatic urethral stricture.

METHODS

From June 2002 to September 2005, 55 patients underwent the core-through procedure. All the patients had obliterative strictures of the bulbomembranous urethra. The length of the stricture was less than 2.5 cm. Catheter removal and voiding cystourethrography were done at 6 weeks after the procedure. Urethroscopy was performed one month after catheter removal.

RESULTS

At a mean follow-up of 20 months (range 1–40), the results were excellent in 38 (69.09%) of 55 patients. The results were acceptable in 16 (29.09%); these patients failed to maintain good flow after holmium core-through urethrotomy and required repeat urethrotomy/endoscopic dilation once or twice for stabilization. Failure was seen in one patient (1.82%). The mean operating time was 40 min (range 30–90) with mean hospital stay of 8 hours (range 6–48). All the patients are continent, and potency status was unaffected by this procedure. The blood loss was negligible and no need for blood transfusion.

CONCLUSIONS

Holmium laser core-through urethrotomy is a safe, feasible and effective procedure for posttraumatic bulbomembranous obliterative urethral strictures with excellent long-term results.

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Clinical follow-up of tissue engineered buccal mucosa in substitution urethroplasty

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As described previously by this group, it is possible to engineer patient-specific buccal mucosa for use in substitution urethroplasty (Bhargava *et al.*, BJUI 2003). Tissue engineered buccal mucosa (TEBM) closely resembles native buccal mucosa in histology and mechanical properties. To date five patients, four of whom had received previous surgery, have been treated with TEBM. Aetiologically, three had urethral strictures secondary to balanitis xerotica obliterans (BXO), one had idiopathic stricture, and one had a combination of BXO (phimosis) and idiopathic stricture. All five underwent substitution urethroplasty by a single surgeon.

RESULTS

Encouragingly, all grafts survived, with no ischaemia or necrosis of grafted tissue

Patient	Procedure	Outcome at 18 months
1	Single-stage	Recurrent fibrosis requiring urethrotomy
2	First stage	Penile shaft fibrosis requiring complete revision, awaiting second stage
3	Re-do first stage (TEBM combined with native BM)	Fibrosis and hyperproliferation of graft tissue, chordee. Partial excision of graft and release of chordee, awaiting second stage
4	Re-do two-stage	Submeatal tightness, intermittent self-dilatation
5	Single-stage	Proximal stenosis, intermittent self-dilatation

CONCLUSIONS

Tissue engineered buccal mucosa can be used for substitution urethroplasty but has similar complications of recurrent fibrosis to native buccal mucosa. Accordingly, current preclinical work is focussed on preventing contraction and fibrosis of TEBM grafts.

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The male perineal sling for stress urinary incontinence: mid term results for the first 50 treated patients

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INTRODUCTION

Safety and efficacy of InVance male sling procedure for the treatment of post-prostatectomy stress incontinence

PATIENTS AND METHODS

Fifty incontinent men underwent perineal bone anchored male sling placement (51 procedures). Etiology of incontinence was prostate surgery in 49 patients and pelvic trauma in 1. Degree of incontinence was categorized as mild (1 or 2 pads per day) in 10 patients, moderate (3 or 4 pads per day) in 30 and severe (using 5 pads or more per day) in 10. Eight patients had previously undergone externe bean radiation.

RESULTS

Mean follow-up was 8.5 months (1–24). 25 patients (50%) were dry (no pads), 13 patients (26%) were improved (1 pad per day) and procedure failed in 12 patients (24%). 2 patients of 8 patients with previous radiation were dry. 5 patients of 10 with severe incontinence were dry or improved. Perineal pain was reported in six patients. Infection occurred in three patients. No osteitis pubis nor uretral erosion or prolonged retention.

CONCLUSION

InVance male sling is safe and efficient technique inpatient with mild or moderate post prostatectomy stress incontinence. Prior radiation and severe incontinence predisposes to treatment failure

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Management and outcome of sphincter weakness incontinence after radical retropubic prostatectomy

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INTRODUCTION

Complications of radical prostatectomy include anastomotic stricture (BNAS), sphincter weakness incontinence (SWI) and urorectal fistula. When co-existing, each complicates the management of the other. This study focuses on coexistent BNAS and SWI.

METHODS

Thirty-six consecutive patients (56–76 years) with coexistent BNAS and SWI were referred for treatment of SWI between 1998 and 2003. Their management and outcome were reviewed.

RESULTS

17/36 (47%) had pure SWI. The rest 19/36 (53%) had a BNAS as well. In 3/19, BNAS was treated by DVIU before referral. Therefore 20/36 (17 + 3) underwent implantation of an artificial urinary sphincter (AUS). 16/36 required treatment of their BNAS: single radical circumferential TUR (9/16), two TUR's (3/16) and three TUR's in (4/16). In this way the BNAS was stabilised and an AUS was implanted in 10/15. Five await implantation of an AUS and one has declined surgery. Of those who had an AUS implanted, two required further TUR's after implantation, which led to erosion of the device in one.

CONCLUSION

BNAS is commonly associated with SWI and commonly requires more than just dilatation or DVIU. Radical or repeated resection may be necessary. BNAS require treatment before proceeding to deal with the SWI.

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Genital anomalies and sexual function in males with anorectal malformation

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INTRODUCTION

Anorectal malformations are a spectrum of anomalies. There are significant levels of associated genital anomalies in this group

PATIENTS AND METHODS

This is a cohort study of adult patients with anorectal malformation. Participants completed validated questionnaires on sexual function. Details about fertility outcomes were also recorded.

RESULTS

Sixty male patients were traced and 31 (50%) completed and returned questionnaires, previous medical records were available for 24 of the 31. Mean age was 27.6 years (range 19–60 years).

Genital anomalies were recorded in 10 of 24 (41.7%) patients whose medical records were available. Anomalies included cryptorchidism (5/24) and hypospadius (3/24). 19 (61%) described themselves as being in a relationship, of these 15 were co-habiting. Encouragingly 87% (27/31) were, or had been sexually active. The mean age of sexual debut was 18 years. 2 of the 31 did not ejaculate at all, and two complained of low semen volume. Six men reported 11 pregnancies in their partners which resulted in 10 live births, four of these required reproductive assistance. In addition, a further two men were awaiting IVF.

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Comparison of detrusor myectomy versus enterocystoplasty in patients with refractory overactive bladder

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INTRODUCTION

Clam enterocystoplasty has become the standard procedure in patients with overactive bladder refractory to behavioural and pharmacological treatment. The concerns over associated complications have led to the development of detrusor myectomy. We report our experience between these two procedures.

METHODS

We retrospectively reviewed patients who underwent these procedures from 1997 to 2003. They were followed up post-operatively to assess subjective symptomatic improvement, objective Patient Global Impression of Improvement (P.G.I-I) score and urodynamic measurements. The results were compared.

RESULTS

Eighteen patients (17 idiopathic, one neurogenic) underwent detrusor myectomy and the other 18 patients (13 idiopathic, five neurogenic) underwent enterocystoplasty. The mean follow up was 49 months (12–101). The overall success rate was 61% for detrusor myectomy and 83% for enterocystoplasty. The mean P.G.I-I score, theatre time, blood loss and hospital stay were higher in enterocystoplasty group but not significantly. More complications were reported with enterocystoplasty. There were significant improvements in post-operative urodynamic measurements in both groups.

CONCLUSIONS

Enterocystoplasty gives a higher success rate but it is associated with more complications. Detrusor myectomy has a satisfactory success rate with less morbidity. Patients with refractory overactive bladder should be given a free choice to make an informed decision between these two procedures.

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Does cranberry juice intake result in a change in urinary proteome in patients with intestinal segments transposed into the urinary bladder? Evidence from a randomised trial

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OBJECTIVES

Cranberry products are commonly used for the prevention of urinary tract infections. The anti-adherence property of proanthrocyanidins present in cranberry products has been reported to be the main mechanism of action. Whether this is brought about by the change in transposed intestinal epithelial protein expression or secretion is at present unclear. The present study investigates whether there is a change in the urinary proteome of patients with bladder reconstruction or replacement using transposed intestinal segments.

METHODS

Participants with transposed intestinal segments were randomised to active cranberry juice intake or placebo for 3 months, a one-month washout period, followed by crossover for another 3 months. As part of this trial, 24-hour urinary samples were collected from six patients at the beginning and end of each treatment arm. Urinary proteins were isolated by a technique previously described by our group. Proteins were resolved by 1-dimenional (1-DE) and two dimensional gel electrophoresis (2-DE). Differences seen in the profile of 1-DE and 2-DE between patients with or without cranberry intake were identified using peptide mass mapping.

RESULTS

Twelve urinary samples were analysed (six after active cranberry intake and six after placebo intake). There were clear differences in the 2-DE urinary protein profiles between participants on active cranberry compared to the placebo group. Peptide mass mapping identified a number of novel urinary proteins in this patient cohort such as Alpha-1-microglobulin, ACTB proteins and transferrins.

CONCLUSIONS

Cranberry intake results in identifiable differences in the urinary proteome of patients with transposed intestinal segments but the role of these novel markers in preventing recurrent/persistent urine infection remains unclear.

Tuesday 27 June 2006 09.30–10.30
Basic Science: Oncology
Chairmen: J. Kelly and K. Mellon

P001

A novel anti-angiogenic strategy based on combination metronomic chemotherapy

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INTRODUCTION

Anti-angiogenic therapy is one of the most promising anti-cancer strategies. However, problems such as lack of efficacy and lack of a principled approach to dosing persist. A novel anti-angiogenic strategy, which may circumvent these problems, is combination metronomic chemotherapy, whereby low concentrations of cytotoxic drugs are given chronically in combination with an anti-angiogenic agent to inhibit angiogenesis. The objective of this study was to provide proof of the metronomic principle using hitherto untested drugs.

MATERIALS AND METHODS

Metronomically-scheduled estramustine, temozolomide and paclitaxel in combination with either an anti-VEGFR-2 antibody or a farnesyltransferase inhibitor were assessed using an *in vitro* model of angiogenesis based on microvascular endothelial cells. The endpoints measured included cell proliferation, formation of vascular sprouts, apoptosis and drug synergy.

RESULTS

At 1–33% of Maximal Tolerated Doses, all cytotoxic agents significantly inhibited angiogenesis and endothelial cell growth by up to 40% after 4 days. Synergy of anti-angiogenic activity was also demonstrated.

CONCLUSION

The study provided proof of the metronomic principle for two oral cytotoxic agents for the first time and demonstrated a means of screening agents for metronomic chemotherapy. It utilised an approach, which may provide a scientific basis towards defining drug doses in metronomic chemotherapy clinical trials.

P002

The von Hippel–Lindau tumour suppressor protein regulates the expression of E Cadherin in renal cancer

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INTRODUCTION

The von Hippel-Lindau (VHL) gene is mutated in familial and sporadic clear cell renal cancer (CCRC). VHL targets the Hypoxia Inducible Factor (HIF) transcription factor for degradation. Loss of VHL or hypoxia leads to activation of HIF and transcription of target genes such as CAIX. However, it remains unclear how VHL loss leads to tumourigenesis. Down-regulation of E-Cadherin (ECAD) is a key step for the progression of many epithelial cancers. We investigated whether VHL influenced ECAD expression.

MATERIAL AND METHODS

ECAD, HIF and CAIX were examined in sporadic and VHL CCRC using immunohistochemistry. Human renal cancer cell lines and sublines stably transfected with VHL were used for *in vitro* experiments.

RESULTS

ECAD is expressed in the distal renal tubules and is absent in CCRC. Pre-neoplastic lesions of VHL inactivation in VHL patients show striking downregulation of ECAD. Western blotting and immunofluorescence reveal barely detectable ECAD levels in VHL defective cell lines and restored expression in VHL transfected sublines. Hypoxia dramatically reduced ECAD mRNA levels in VHL expressing RCCs. Furthermore, silencing of HIF by siRNA in VHL defective RCC cells rescued ECAD expression.

CONCLUSION

Our results provide significant insight into the gate-keeping role of VHL in renal epithelium.

P003

Isolation and characterisation of the adult human renal stem cell enriched side population using dye efflux method

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PromPT Genito-Urinary Cancer Research Group, Cancer Research UK Paterson Institute and Christie Hospitals NHS Trust, Manchester, UK

INTRODUCTION

The Hoechst 33342 dye efflux technique is known to isolate a stem cell enriched side population (SP). The objectives of our study were to isolate and characterise Normal Kidney (NK) and RCC Side Population.

METHODS

Ethical approval and informed consent were taken for tissue collection. Single cell suspensions were stained using the standardised Hoechst 33342 protocol and were sorted into SP and non-SP cells. These cells were characterised by cell culture and immunohistochemistry.

RESULTS

The Hoechst low SP formed 3.1 ± 0.3% of epithelial cells in NK and 4.6 ± 1% in RCC. SP cells were highly proliferative; undergoing 9.7 ± 0.8 passages over a period of 73.3 ± 5.1 days compared to 5.4 ± 0.8 passages over 41.6 ± 4.8 days for the body. The colony forming efficiency of SP in the presence of irradiated STO feeder layer was 45.6 ± 4.6% compared to 7.3 ± 3.2% for body cells. SP cells form large cellular spheroids in 3D-Matrigel cultures. There was increased expression of stem cell markers in the SP fraction.

CONCLUSIONS

There is a Hoechst 33342 SP in NK and RCC, which is similar to that seen in enriched stem populations in other tissues. Renal SP cells possess enhanced *in vitro* proliferative capacity with increased expression of stem cell markers.

P004

The prenyltransferase inhibitor AZD3409 is active in combination with radiotherapy in pre-clinical models of urothelial carcinoma

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INTRODUCTION

AZD3409 is a oral, protein prenylation inhibitor, designed to mimic the CAAX box of K-ras4B, with Ki's of <1 nM and ~8 nM against farnesyltransferase and geranylgeranyltransferase-1. AZD3409 inhibits the growth of H-ras-transformed fibroblasts and farnesyltransferase activity in Calu-6 xenografts.

AIM

The aim of this study was to evaluate the efficacy of AZD3409 in pre-clinical models of urothelial carcinoma.

METHODS

Human urothelial carcinoma cells with mutant (T24, J82) and wild type H-ras (253J-BV, RT-112) were cultured with AZD3409. Effects on cell viability, cell cycle and combination with radiotherapy were determined by MTT, flowcytometry and colony forming assays, respectively.

RESULTS

AZD3409 significantly inhibited cell viability of cells with wt H-ras and mutant H-ras, in a dose dependent manner. T24 cells were the most sensitive, with a reductions, at 72 h, of 34% ($P = 0.048$), 51% ($P < 0.0001$) and 62% ($P < 0.0001$) with 0.5, 1 and 5 μM concentrations, respectively. AZD3409 caused a significant reduction in S phase and increase in G1 fraction. 1 μM AZD3409 significantly potentiated the cytotoxic effect of irradiation on all urothelial carcinoma cell lines studied, *in vitro*.

CONCLUSIONS

AZD3409 has potential therapeutic effects, as monotherapy and in combination with radiotherapy, in urothelial carcinoma with either mutant or wild type H-ras.

P005

Global profiling of microRNAs in urothelial cell carcinoma

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INTRODUCTION

MicroRNAs (miRNAs) are short, non-coding RNAs that comprise 2% of human genes. They play a role in developmental timing, tissue growth and apoptosis by regulating expression of multiple genes through sequence-specific base pairing with target mRNAs. We profiled urothelial cell carcinoma (UCC) for all known miRNAs to characterise clusters and key miRNAs involved in bladder tumourigenesis.

MATERIALS AND METHODS

Small RNAs (18-26 nucleotides) were isolated from 60 snap-frozen UCCs, 10 normal urothelium and 12 urothelial cancer cell lines. RNAs were adaptor-ligated sequentially on the 3'-end and 5'-end followed by reverse transcription, PCR amplification and labelling. MiRNA capture probes were conjugated to carboxylated xMAP beads (Luminex Corporation). Samples were hybridised to the bead-probes and median fluorescence intensity was measured.

RESULTS

Unsupervised hierarchical clustering algorithms identified groups of microRNAs differentiating high-grade tumours from low-grade tumours and normal cases. An ENSEMBL search of predicted targets of the key miRNAs, revealed known oncogenic candidates involved in bladder cancer progression.

CONCLUSION

This study establishes that miRNA are aberrantly expressed in UCC extending their role beyond embryogenesis. Loss of miRNA expression is predicted to result in activation of multiple oncogenic targets, some of which have been shown to be involved in bladder tumourigenesis.

P006

Expression of matrix metalloproteinases and tissue inhibitors of metalloproteinases in carcinoma *in situ* of bladder correlates with response to intravesical therapy and disease progression

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AIM

To study the expression of Matrix metalloproteinases (MMP-2 and MMP-9) and their physiological inhibitors Tissue inhibitor of Matrix metalloproteinases (TIMP-1 & 2) in Carcinoma *in situ* (CIS) of bladder to identify the role of these enzymes in the biology of these tumours.

METHODS

Expression profile of MMP-2, MMP-9, TIMP-1 and TIMP-2 was assessed by immunohistochemistry in 85 specimens of CIS, its synchronous or metachronous TCC lesions as well as in 10 normal bladder biopsies.

RESULTS

CIS lesions had high expression of MMP-9, TIMP-1 and TIMP-2 compared to normal bladder. Percentage of positive expression in CIS and normal bladders were 35 and 20 for MMP-2, 71 and 30 for MMP-9, 82 and 40 for TIMP-1 and 77 and 0 for TIMP-2 respectively. Expression of MMP-9 and TIMP-1 correlated with response to intravesical therapy with BCG and disease progression. The mean time to recurrence and progression were longer in patients who had positive expression for MMP-9 and TIMP-1.

CONCLUSION

MMP-9, TIMP-1 and TIMP-2 expression were higher in CIS of bladder compared to normal bladder. Positive expression of MMP-9 and TIMP-1 may be useful as a marker to identify patients who will not respond to intravesical therapy.

P007

Combined treatment of bladder cancer cell lines with lapatinib (GW572016) and chemotherapy – evidence of schedule-dependent synergy

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INTRODUCTION

For patients with metastatic TCC treated with gemcitabine and cisplatin (GC), the median survival is one year and toxicity remains a concern. An emerging strategy is to combine cytotoxic agents with novel targeted therapies, such as herceptin which targets ErbB2 receptors. However, many muscle-invasive bladder cancers express ErbB1 and ErbB2 receptors. Our aim was to assess the effect on bladder cell viability of combining lapatinib [a dual ErbB1/ErbB2 tyrosine kinase inhibitor] with GC.

MATERIALS AND METHODS

Two bladder cancer cell lines, one (RT112) with high expression of ErbB1/ErbB2, the other (J82) with low expression were treated with varying doses of GC combined with the IC50 dose of lapatinib, in varying sequences of application. We assessed cell viability using the MTT assay.

RESULTS

In both cell lines, lapatinib before and during or concomitant with GC inhibited cell growth more than GC alone or lapatinib after GC ($P < 0.01$ to $P < 0.001$; Analysis of Variance). Interaction plots of lapatinib administered before GC versus GC alone-demonstrated synergy.

CONCLUSION

In bladder cancer cell lines, we have shown schedule-dependent synergy between lapatinib and GC. Lapatinib may enable reduced-dose chemotherapy, a potential toxicity-sparing strategy. Lapatinib is a product of GlaxoSmithKline

P008

Characterisation of a new therapeutic target Fos-Related Antigen-1 (Fra-1) in muscle-invasive bladder cancer

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INTRODUCTION AND OBJECTIVE

The Activator Protein-1 (AP-1) transcription factor complex component Fra-1 is a crucial effector of the Ras/Mitogen Activated Protein Kinase (Ras/MAPK) signalling pathway, and has been implicated in several human cancers. Recently, an anti-Fra-1 DNA vaccine has been developed which inhibits growth and metastasis of aggressive breast and lung tumours in mice. We have previously demonstrated Fra-1 accumulation in approximately 60% of muscle-invasive bladder tumours. Here, we assess Fra-1 function and mechanisms leading to Fra-1 accumulation in bladder cancer cells.

METHODS

Functional studies of Fra-1 were carried out using Western Blot, immunocytostaining, confocal microscopy, RNA interference and cell motility assays.

RESULTS

RNA interference-mediated inhibition of Fra-1 in Fra-1-positive cells activated actin stress fibre formation and, subsequently, inhibited cell motility. Overexpressing Fra-1 resulted in a decrease in stress fibre formation and promoted cell motility. We identified and mapped a novel C-terminal instability signal controlling Fra-1 degradation and also demonstrated that the activity of this motif is antagonised by Ras/MAPK.

CONCLUSIONS

Our results suggest that Fra-1 functions as a regulator of bladder cancer cell motility. We plan to identify strategies in bladder cancer to either control Fra-1 levels via the C-terminal instability signal or to uncouple Fra-1 from cell motility.

P009

Replication licensing factor Mcm2 predicts disease progression in penile cancer patients

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BACKGROUND

This study examines Mcm2 as a prognostic marker in penile cancer. A convergent point for DNA replication and growth-signalling systems, the 'replication-licensing pathway' lies at a critical point in cellular proliferation/differentiation; with attractive diagnostic, prognostic and therapeutic targets. Minichromosomal maintenance proteins (Mcm2-7) are dysregulated early in epithelial carcinogenesis. Analysis of urine sediment of 353 patients showed Mcm5 as a sensitive predictor of bladder cancer; ROC = 0.93 (Stoeber et al. JNCI 2002; 94:1071-6). We discuss our results using a large and unique penile cancer series.

PATIENTS AND METHODS

A total of 148 penile Scc specimens with associated survival-data were immunohistochemically analysed for antibodies against Mcm2, Geminin and Ki-67. Labelling indices (LI) were calculated and compared against parameters including; age, tumour-subtype, lymph node metastases, 3 & 5 year survival rates.

RESULT

The expression-profile of Mcm2 protein has been analysed in 95 specimens to date; demonstrating correlation to grade; LI grade-1 (43%), grade-2 (76%) and grade-3 (88%). Additionally, low Mcm2 expression is significantly linked to improved disease-free survival at 3 and 5 years. A Kaplan-Meier curve demonstrates this survival and associated cell-cycle kinetic information.

CONCLUSION

Mcm2 is a prognostic marker for penile cancer. This marker may improve patient selection for additional surgical or chemotherapeutic treatments.

Tuesday 27 June 11.00–12.00
Bladder Dysfunction
Chairmen: M. Drake and S. Harrison

P010

A double-blind, placebo controlled study investigating efficacy of botulinum toxin type A (Dysport ®) in MS related overactive bladder syndrome (OAB): Provisional 12-week clinical results

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Western General Hospital, Edinburgh, UK

INTRODUCTION

The use of botulinum toxin type A in the treatment of OAB is increasing. However, with few placebo controlled studies performed evidence for its efficacy currently depends on non-randomised and anecdotal data.

PATIENTS AND METHODS

Twenty patients with multiple sclerosis were included and randomised. Each had OAB with at least one episode of leakage per day. All had found anti-cho-

	Change in mean/median	
	Placebo group	Active group
Number leakage episodes[§]	−5.22 (6.14)	−13.7 (18.7)
Frequency[§]	0.56 (6.44)	−6.33 (9.00)
Nocturia[†]	0.00	−2.00
Pad weights[†]	−12.00	−168.00*
Anticholinergic use[‡]	0	−0.5*

[§]Two sample *t*-test.
[†]Mann-Whitney test.
[‡]Fischer exact test.

linergics either ineffective or their side effects intolerable. Keeping 'double-blinding', 10 patients were injected with 500 units Dysport®, and 10 with placebo. Continence diaries assessing daytime frequency, nocturia and episodes of leakage were completed for three consecutive days prior to injections (baseline) and at 12 weeks. Twenty-four-hour pad weights were also performed at these points.

RESULTS

A significant reduction was seen in both pad weights and patients requiring anticholinergics. However, no significant difference was seen in frequency, nocturia and number of leakage episodes, [table; mean/median (SD), $*P < 0.05$]

CONCLUSION

MS patients suffering from OAB wet would benefit significantly from botulinum toxin type A.

P011

Quality of life following intra-detrusor injections of Botulinum Toxin-A in refractory idiopathic detrusor overactivity: Results from a randomised, double-blind, placebo-controlled trial

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INTRODUCTION

The impact of botulinum toxin A (BTX-A) intra-detrusor injections on quality of life (QoL) in patients with overactive bladder (OAB) and idiopathic detrusor overactivity (IDO) refractory to anticholinergics was investigated in this randomised, double-blind, placebo-controlled trial.

PATIENTS AND METHODS

Thirty-four patients were randomised to 200 units of BTX-A or placebo via a flexible cystoscopic technique. QoL was assessed at baseline, 4 and 12 weeks post-injection utilising the King's Health Questionnaire (KHQ), Incontinence Impact Questionnaire (IIQ-7) and Urogenital Distress Inventory (UDI-6). Open-label extension of the study occurred in the BTX-A group alone at 24 weeks.

RESULTS

Both placebo and BTX pre-treatment variables were comparable. Analysis of variance showed that QoL was significantly improved in the BTX-A group using all three QoL instruments at 4 and 12 weeks when compared with placebo. At 24 weeks significant improvements were maintained in the BTX-A group compared with baseline scores using the KHQ and the UDI-6 but not with the IIQ-7.

CONCLUSIONS

BTX-A injections at 200 units are effective at improving QoL in patients with OAB symptoms when compared to placebo for at least up to 12 weeks. The open-label extension study suggests the effect appears to last for up to 24 weeks.

P012

Mechanical devices in adult female stress urinary incontinence: A systematic review.

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INTRODUCTION

Mechanical devices are an inexpensive first-line management of stress urinary incontinence and do not compromise future surgery. This systematic review aims to determine the effects of mechanical devices in the management of adult female urinary incontinence.

METHODS

Trials were identified from the Cochrane Incontinence Group's specialised register of controlled trials. Three reviewers assessed the identified trials for eligibility and methodological quality and independently extracted data from the included studies. Data analysis was performed using RevMan software (version 4.2).

RESULTS

Six randomised trials met the inclusion criteria of this review. Pad weighing tests did not favour a mechanical device over no treatment (SE −12.28; 95% CI −31.32, 6.76).

There was no significant difference in pad weighing tests (SE −5.40; 95% CI −36.56, 25.76) when intravaginal tampax tampon is compared to a hodge pessary and 24 h pad tests (SE −9.40; 95% CI (107.40, 88.60) when an intravaginal Contrelle Continence Tampon device is compared to a Conveen Continence Guard device. The Reliance device was not superior to NEAT device (OR 1.80; 95% CI 0.21–15.4) or FemAssist device OR1.75; 95% CI 0.77–3.99).

CONCLUSIONS

The place of mechanical devices in the management of urinary incontinence remains in question. There was insufficient evidence in favour of one device over no treatment, one device over another and no evidence to compare mechanical devices with other forms of treatment.

P013

The first UK report of minimally invasive staged sacral nerve stimulation implants for urinary retention

R.B.C. KAVIA, S.N. DATTA, G. GONZALES, M.S. KALSI, C.J. FOWLER and S. ELNEIL
National Hospital for Neurology and Neurosurgery, London, UK

INTRODUCTION

Sacral nerve stimulation (SNS) is the only treatment shown to restore voiding in young women with retention due to an abnormally overactive urethral sphincter. Previously, successful temporary stimulation was the indication for an invasive implantation of the SNS (63% success at our centre). We report the first UK experience of the new minimally invasive staged procedure.

METHOD

Using fluoroscopy a self-fixing lead is placed in the 3rd sacral foramen via needle introducer, optimum position being gauged by the motor or sensory response. The lead is connected to an external stimulator and effect monitored for 4 weeks. If voiding is successfully restored the stimulator system is internalised.

RESULTS

Twenty-five women [age (mean) – 36.2 years]. Mean follow-up was 8.1 months. Twenty-two women voided post operatively and 18 continue to void (81.8%), of the four failures – lead problem (two patients), infection (one patient) inadequate response (one patient). Three women failed the first phase and the lead was removed. Operative complications (six patients) included wound infection (three patients), haematoma (three patients) and lead migration/damage (three patients).

CONCLUSION

Staged SNS shows promising response rates for this expensive implant procedure in complex patients. Our early results compare favourably with the 'old' technique and with European data, however longer term data is required.

P014

Desmopressin: a novel treatment for overactive bladder syndrome

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Antimuscarinics are the mainstay of treatment for OAB but their use is limited by side effects. This study looked at whether desmopressin, an antidiuretic, can help alleviate symptoms of OAB, if taken in the morning. An investigator-initiated, 2-week multinational, multicentre, double-blind, placebo-controlled prospective, randomised, cross-over study of adults with OAB was conducted using 0.2 mg oral desmopressin. Patients were included if they had ≥4 voids in the first 8 hours of the day, excluding the first morning void, as measured on a 7-day FVC. They were randomised into two groups: one had desmopressin on days 1,3 and 5 and the other on days 8, 10, and 12, with placebo for the rest of the time in both groups. A total of 190 patients were screened. Eighty-eight entered the trial and 87 completed it. Median age 61. Frequency (3.2 vs. 4.2; $P < 0.001$), urgency ($P = 0.003$) and severe incontinence ($P < 0.01$) episodes were significantly reduced on drug days compared to placebo. Side effects were mild and included headache and diarrhoea. No hyponatraemia was reported. Antidiuresis, using oral desmopressin tablets, is a novel, feasible and safe concept in the treatment of adults with OAB and could be considered in the armamentarium of drugs available for the treatment of OAB.

P015

Effect of sildenafil citrate (viagra), in women suffering from obstructive voiding or retention associated with the primary disorder of sphincter relaxation

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INTRODUCTION

Women with the primary disorder of sphincter relaxation find voiding difficult. Studies have identified neuronal nitric oxide synthase in the female urethral sphincter and NO donors have shown to decrease sphincter pressures. The aim of our study was to determine if sildenafil could improve sphincter relaxation and thereby increase flow-rates and improve bladder emptying.

METHODS

Twenty female patients with complete (5), partial retention or obstructed voiding (15) with a Qmax < 15 ml/min were included. All had an elevated urethral pressure profile and sphincter volume. The study was a double blind, randomised, placebo control, cross-over design, with patients taking sildenafil or placebo and measurement of flow rate and residual volume at baseline and after each treatment phase.

RESULTS

When sildenafil was compared to placebo, no significant differences were seen in measured parameters. A significant mean decrease in IPSS of 3.64 ($P = 0.0083$) and increase in Qmax of 4.7 ml/s ($P = 0.025$) in partial retention patients was noted between baseline and sildenafil.

CONCLUSION

This is the first study looking at sildenafil in voiding dysfunction in women. Clinical improvements were noted in flow rate and reduction in IPSS when compared to baseline, but not significant when compared to placebo.

P016

Hydrodistension and intravesical instillation of cystistat in interstitial cystitis

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INTRODUCTION

Study looking at role of sequential general anaesthetic hydrodistension and intravesical instillation of cystistat for treatment refractory interstitial cystitis.

MATERIALS AND METHODS

Twenty-three patients (male = 4, female = 19) were recruited over 3 years, average age 53.4 years (range 25–81). All diagnosed on basis of symptomology, cystoscopic findings and histology. Previously tried therapies included anticholinergics, hydrodistensions and cystistat instillation under local anaesthesia. All underwent cystoscopy, hydrodistension of bladder and instillation of cystistat (40 mg/50 ml). Catheter was left as tolerated (2–6 hours). Treatment initially at monthly intervals, duration between treatments increasing depending upon symptom response.

RESULTS

Average treatment number was six (range 1–15). Average duration between treatments was 1.8 months (range 1–12). Seventeen patients (74%) responded with immediate improvement in symptoms (reduced frequency $n = 15$, urgency $n = 13$, nocturia $n = 9$ and suprapubic pain $n = 16$). In all responders, healing of ulceration and resolution of inflammation occurred. Average bladder capacity increased from 680 to 903 ml. Of the 18 that had previous failed cystistat under local anaesthesia, 15 had a sustained improvement in symptomology.

CONCLUSION

Sequential hydrodistension and cystistat treatment under general anaesthesia should be considered for resistant cases of interstitial cystitis, especially those that cannot tolerate it under local anaesthesia.

P017

Urodynamics in the elderly: is it worthwhile?

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INTRODUCTION

In the elderly, treatment of lower urinary tract (LUT) dysfunction is often based on symptoms, which may correlate poorly with definitive diagnosis, and carry significant side-effects. We analysed the utility of formal urodynamic assessment in an advanced elderly population to determine how closely symptoms predict urodynamic diagnosis.

PATIENTS AND METHODS

We retrospectively analysed 157 patients over the age of 80, who underwent formal filling and voiding cystometry conducted according to ICS standards between November 2001 and January 2005.

RESULTS

There were 122 males and 35 females. The mean age was 84 (range 80–94). Detrusor overactivity (DO) was the most common urodynamic finding in male patients, seen in 56/122 (46%), whereas decreased bladder compliance was the most common in females, seen in 11/35 (31%). Seventy patients presented with pure storage symptoms, and DO was found in only 30 of these (43%). Thirty-one patients presented with pure voiding symptoms and bladder outlet obstruction was identified in only 15 of these (48%).

CONCLUSIONS

In octogenarians, there is a poor correlation between LUT symptoms and urodynamics diagnosis. We suggest that, in suitable elderly patients, formal urodynamic evaluation is useful and can guide patient management, particularly when antimuscarinic agents are being considered.

P018

Can clinical judgement replace urodynamics?

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INTRODUCTION

The purpose of this study is to check if a detailed history could reliably predict the urodynamic diagnosis and prevent the need of undertaking the test.

MATERIALS AND METHODS

Records of standard urodynamics undertaken between 1993 and 2003 were reviewed. The clinical diagnosis made by the physician after taking the patient's history and before commencing the test was checked against the results of the urodynamics (UDS).

RESULTS

A total of 7987 urodynamic records of adult patients were reviewed (table).

	The results of UDS		
Clinically predicted diagnosis (No. of records)	UDS showed same diagnosis (%)	UDS were normal (%)	UDS showed different diagnosis (%)
Stress incontinence (2279)	60	9	31
Detrusor overactivity (4281)	66	10	24
Bladder outlet obstruction (645)	54	6	40
Detrusor underactivity (285)	26	12	62
Normal (497)	41	As before	59
All (7987)	60	9	31

CONCLUSION

Spending time with patient and taking a good history would lead to a clinical judgement that is accurate in 60% of the cases. It misses pathology in only 4% where the clinician expected the patient to have normal test but the UDS was abnormal (293/7987). Undertaking the urodynamic test should be clinically justified, in particular before considering any invasive treatment.

P019

The presentation, diagnosis and outcome of urethral diverticulum repair in the female

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INTRODUCTION

We reviewed the outcome of twenty-two consecutive female patients with symptomatic urethral diverticulum.

PATIENTS AND METHODS

The notes of all patients having urethral diverticulectomy between 2000 and 2005 were reviewed and data collected on mode of presentation and diagnosis, surgical treatment and its outcome.

RESULTS

Twenty-two patients had 24 operations for urethral diverticula. The classical triad of dysparuenia, dysuria and post-micturition dribble was present in only 27%. The diverticulum was palpable on examination in 77%. The diagnosis was confirmed via a multitude of modalities – the most accurate of which was MRI (100%). Diverticulectomy excision and repair was performed in two-layers in 46%, in three-layers in 46%, and with Martius fat pad interposition in 8%. Acute complications occurred in 8.3% and included urinary tract infection, vaginal bleeding and urinary retention. Stress incontinence and irritative LUTS persisted in 12.5%. Urethral diverticulum recurred in 8.3% and was successfully treated by a second diverticulectomy.

CONCLUSION

The classical symptom triad of urethral diverticula is uncommon. A high index of suspicion, clinical examination and an MRI are the best means of making the diagnosis. The success rate of primary surgery is 91.7%. Fat pad interposition does not appear to confer an advantage.

Tuesday 27 June 11.00–12.00
Prostate Cancer Diagnosis
Chairmen: A. D'Amico and N. George

P020

Methods of calculating PSA velocity

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INTRODUCTION

A number of methods are used to calculate PSA velocity (PSAV). We compared PSAV derived by three methods with a single PSA cut-off of 4 ng/ml.

PATIENTS AND METHODS

From a confidential regional electronic register of PSA tests, men with an initial PSA < 10 ng/ml and a subsequent diagnosis of prostate cancer or benign histology were identified. Those with ≥3 PSA tests before diagnosis, carried out over a

PSAV method	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
AE	64.6	69.3	50.4	80.2
LR	69.1	73.4	55.6	83.1
FL	69.1	74.9	57.1	83.4
PSA ≥ 4	63.4	53.5	39.7	75

minimum of 18 months were included. PSAV was calculated using three methods: (i) Arithmetic equation of change in PSA over time (AE); (ii) rate of PSA change using first and last values only (FL) and (iii) Linear regression (LR). A PSAV cut-off of 0.75 ng/ml/yr calculated by each method was compared with an initial PSA of ≥4 ng/ml.

RESULTS

A total of 2205 men were included with 718 (32.6%) having cancer and 1487 (67.4%) benign histology.

CONCLUSION

PSAV had improved test characteristics compared to a single PSA cut-off of 4 ng/ml. LR, using all PSA values, should be the method of choice for calculating PSAV, however FL is adequate for everyday use.

P021

Relationship between PSA velocity and initial PSA

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INTRODUCTION

We investigated the relationship between PSA velocity (PSAV) and initial PSA.

PATIENTS AND METHODS

From a confidential regional PSA database, men with an initial PSA < 10 ng/ml and a subsequent diagnosis of prostate cancer or benign histology were identified. Those with three or more PSA tests before diagnosis, carried out over ≥18 months were included. PSAV was calculated using linear regression.

RESULTS

A total of 2237 men were included. 1487 (66.5%) had benign histology and 750 (33.5%) cancer. Thirty-two men were excluded as their PSAs suggested treatment of prostate cancer. Mean (10.35 vs. 0.64 ng/ml/yr) and median (1.47 vs. 0.21 ng/ml/yr) PSAVs were significantly different in cancer and benign groups. Median PSAV was significantly different by PSA category. PSAV increased incrementally with initial PSA.

	Cancer		Benign		0.75 ng/ml/yr cut-off	
Initial PSA	Number	Median PSAV*	Number	Median PSAV*	Sensitivity (%)	Specificity (%)
0–1.99	88	0.37	390	0.05	45.5	90
2–3.99	175	1.21	405	0.28	66.9	75.3
4–5.99	164	1.46	338	0.37	70.1	64.8
6–7.99	166	1.61	225	0.48	77.1	65.3
8–9.99	125	2.31	129	0.52	76.8	55
All	718	1.47	1487	0.21	69.1	73.3

*Kruskal-Wallis test ($P < 0.001$).

CONCLUSION

PSAV was strongly associated with initial PSA. A 0.75 ng/ml/year cut-off may not be appropriate, particularly with high (>8 ng/ml) or low (<2 ng/ml) initial PSA.

P022

PSA patterns in the diagnosis of prostate cancer

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INTRODUCTION

We studied patterns of PSA change and their association with cancer diagnosis.

PATIENTS AND METHODS

From a confidential regional PSA database, men with initially raised PSA (4–10 ng/ml) and ≥3 tests were included. Those with prostate cancer or benign histology were identified. Serial PSA levels were categorised into patterns. Pattern 1 showed a steadily

increasing PSA. Pattern 2 had an increasing trend however at least one PSA was lower than the preceding level. In pattern 3, PSA fell below baseline but not to normal. In pattern 4, PSA decreased to normal at some time.

RESULTS

A total of 6579 men were included. 581 (8.8%) had cancer, 1048 (15.9%) benign histology and 4950 (75.2%) neither diagnosis. Mean initial PSA was 6.9, 6.5 and 6.2 ng/ml (*t*-test, $P < 0.001$). Proportion with definitive diagnosis and cancer was significantly different by pattern.

Pattern	Cancer (%)	Benign (%)	Neither diagnosis (%)	Proportion with diagnosis (%)*	Proportion diagnosed with cancer (%)*
1	156 (26.8)	127 (12.1)	436 (8.8)	39.4	55.1
2	180 (31)	234 (22.3)	754 (15.2)	35.4	43.5
3	176 (30.3)	448 (42.7)	1525 (30.8)	29	28.2
4	69 (11.9)	239 (22.8)	2235 (45.2)	12.1	22.4
Total	581	1048	4950	24.8	35.7

*Kruskal-Wallis test ($P < 0.001$).

CONCLUSION

PSA patterns are associated with differing rates of cancer detection. A decreasing PSA, even to normal, occurs in men with cancer and should not delay biopsy.

P023

An evidence base for the use of prostate-specific antigen in men presenting with haematuria

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INTRODUCTION

Haematuria is a known complication of advanced prostate cancer, and so PSA tests are often performed on patients presenting with haematuria. However, this is done inconsistently, and we aimed to develop an evidence base for its use.

METHODS

We retrospectively analysed records of 637 male patients presenting with haematuria to our Urology department between April 2002 and June 2005. We compared PSA results and numbers of prostate cancers detected with the Rotterdam arm of the European Randomised Study of Screening for Prostate Cancer (ERSPC), and the feasibility study for the PROTEC trial.

RESULTS

Of 637 patients 355 underwent PSA testing. There were a significantly higher number of age-matched abnormal PSA results in men presenting with haematuria when compared with the Rotterdam and PROTECt data (*P* values: <0.001). There were a significantly higher proportion of age matched prostate cancers in our study compared with the PROTEC trial, 5.0% compared with 2.6% respectively (*P*-value: 0.046).

CONCLUSION

Our results suggest that men presenting with haematuria have a higher risk of an abnormal PSA and a probable increased risk of prostate cancer. We suggest that men aged 50–79 presenting with haematuria should undergo DRE and PSA testing after full counselling.

P024

Should we stratify prostate biopsy protocols based on PSA values?

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INTRODUCTION

TRUS biopsy is the gold standard in prostate cancer diagnosis. Our study evaluated cancer detection rates (CDR) on an individual core basis, to establish stratified biopsy protocols for higher PSA levels.

PATIENTS AND METHODS

A total of 436 consecutive patients with PSA ranging from 10.1 ng/ml to 6660 ng/

ml who underwent TRUS biopsy (8–12 cores) over a 4-year period were analysed. The six peripheral biopsies were directed more laterally at the base, mid-zone and apices. The remainder were standard para-sagittal sextant biopsies. The cores were placed in separate pots and histopathological findings analysed. Patients were stratified into three PSA groups (PSA 10–20, 20–50 and >50 ng/ml).

RESULTS

Mean age was 71.6 years. 270 men had cancer (62%). CDR was 46% (10–20 ng/ml), 76% (20–50 ng/ml) and 92%(>50 ng/ml) respectively. All 112 cancers in men with PSA 10–20 ng/ml would have been detected with an eight-core biopsy protocol (excluding all mid zone biopsies) and the 158 men (PSA > 20 ng/ml) with cancer would have had diagnosis confirmed with a six-core biopsy protocol (excluding all mid-zone and para-sagittal basal biopsies).

CONCLUSION

Prostate cancer diagnosis required eight cores in men with PSA 10–20 ng/ml and six cores in men with PSA > 20 ng/ml. We suggest limited biopsy protocols for men with PSA > 10 ng/ml.

P025

Retrospective comparison of lignocaine periprostatic infiltration versus entonox inhalation for prostate biopsy

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INTRODUCTION

Men undergoing transrectal ultrasound guided trucut biopsy of prostate can experience considerable discomfort and psychological stress. The described methods of pain relief for prostate biopsy involve either numbing the patient or numbing the prostate. We submit a retrospective analysis of our experience of two methods of pain relief, lignocaine periprostatic infiltration and entonox gas inhalation.

MATERIAL AND METHODS

Since August 1999 we have performed more than 1800 TRUS guided Biopsy of Prostate. Prior to 2005 entonox gas inhalation was used for pain relief. Since 2005 we have started using lignocaine periprostatic infiltration exclusively. Consecutive series of 204 pts who had lignocaine periprostatic infiltration in 2005 was compared with 351consecutive pts who had entonox inhalation in 2004. The groups matched for population referred, number of biopsy cores obtained (12 as standard), prostate volume, age, PSA and antibiotic cover and bowel preparation. The specialist nurse, to 'measure pain', used an analogue pain score scale at the end of the procedure.

RESULTS

Pain was 'measured' using pain scores. We used a numeric scale with pain scores from 0 to 10 – 0 being no pain and 10 being very severe pain. The results of the pain scores obtained were:

Lignocaine group	Entonox group
88% scored 0–4	69% scored 0–4
12% scored five and above	31% scored five and above

Nonparametric test, Mann–Whitney U test was used to compare the two groups and the difference in the results was found significant $P < 0.05$.

CONCLUSION

This retrospective analysis supports our initial observation and experience that periprostatic infiltration of local anaesthetic for TRUS guided Biopsy of Prostate is a better alternative to entonox analgesia. It is safe, easy to use and provides better pain relief. It has become the standard of care in our practice.

P026

Do we need central pathology review? A cancer network audit of prostate biopsy reporting

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INTRODUCTION

The cancer improving outcome guidelines (IOG) recommend central review of all prostate biopsies from cancer patients considered for radical treatment.

METHODS

Sixty single microscope slides were circulated. Each was given Gleason scores and overall Gleason Grade and put into one of four diagnostic/management groups: Less than 4, 4–6, 7 and 8–10.

RESULTS

Eleven pathologists participated. Consensus diagnosis was agreed in 55 of 60 cases. The Cancer Centre lead pathologists showed the highest level of agreement (46–47/55). All unit lead pathologists scored similarly but one scored 33/55. Small foci of high-grade tumour were the main cause of discrepancy. No case was graded less than 4. There is a good degree of concordance throughout our network on Gleason Grading compared to published studies.

CONCLUSIONS

It was agreed to continue to review biopsies centrally from some units if this will affect clinical management. The worst pattern must be reflected in the Gleason Score as recommended in the recent European Guidelines. The national EQA scheme starting in 2006 will allow further assessments of performance and comparison with other pathologists and networks. If Central Review is required there must be resources allocated to Pathology for this additional diagnostic work.

P027

Follow-up of patients with 'Atypical Small Acinar Proliferation' in prostate needle biopsy specimens

I.P. WHARTON, S. SHAKTAWT, R. SINGH, H. OJHA and M.C. FOSTER
Good Hope Hospital, Sutton Coldfield, UK

INTRODUCTION

Atypical small acinar proliferation (ASAP) is occasionally observed in prostatic needle biopsies. Despite lacking sufficient cytological atypia for malignancy, ASAP is suspicious and associated with a diagnosis of prostate cancer (CaP) on subsequent biopsy. The follow-up provided to patients with reported ASAP was therefore investigated.

METHOD

A retrospective study was performed of 120 consecutive patients diagnosed with ASAP on needle biopsy specimens from 1999 to 2003. Initial biopsy was undertaken for elevated PSA and/or abnormal rectal examination. Patients with coexistent high-grade PIN were excluded. For each patient the details and results of subsequent needle biopsy were documented.

RESULTS

Seventy-two patients underwent follow-up biopsy. 25.0% and 4.2% were diagnosed with CaP on second and third biopsies, respectively. No further malignancies were detected on fourth biopsy. Diagnosed Gleason Score varied from 4–8 (mean 6.1). 71.4% of confirmed carcinomas were diagnosed within 1 year of the initial atypical biopsy, whilst only 4.8% were diagnosed after 2 years.

CONCLUSION

Performing second and third needle biopsies after an initial finding of ASAP yields significant diagnoses of CaP (in 29.2% of ASAP cases) without prolonged clinical delay (95.2% of CaP diagnosed within 2 years of initial biopsy). Histopathological follow-up of ASAP is therefore justified.

P028

Diagnosis of prostate cancer by detection of minichromosome maintenance 5 protein in urine sediments – a pilot study

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INTRODUCTION

Urinary Mcm5 has been shown to be a powerful test for bladder cancer. The aim of this study was to determine urinary Mcm5 expression in men with prostate cancer (PCa) before and after prostate massage.

METHODS

Urine was obtained from 84 men with PCa (treatment naive n = 37,androgen blockade n = 26,radiotherapy n = 21). In 52, urine was obtained before and after massage. Mcm5 levels were measured using an immunofluorometric assay (DELFIA).

RESULTS

Mcm5 was elevated in the pre or post massage specimen in 80.0% (n = 67) of patients. Mcm5 levels were most commonly elevated in treatment naive patients (86.5%, n = 32). The sensitivity of the test in the androgen blockade group was 73.1% and in the radiotherapy group 76.2%. In the pre and post-massage group there was a clear increase in Mcm5 following prostate massage [pre: mean Mcm5 2684, post: mean Mcm5 3816 ($P < 0.007$)]. The sensitivity in untreated patients was 57.1% when using the pre massage urine Mcm5 results alone, compared to 85.1% when using the post massage urine samples only.

CONCLUSIONS

These preliminary results indicate that urinary Mcm5 is elevated in men with PCa and increased in urine following prostate massage. The diagnostic accuracy of this test alone and in conjunction with PSA testing should be further evaluated.

Tuesday 27 June 14.30–15.30
Stones
Chairmen: N. Burgess and K. Hastie

P029

Direct general practitioner access to CT scanning for patients with suspected renal colic

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INTRODUCTION

Patients with suspected renal colic are often admitted and found not have upper tract calculi; in others, pain may settle rapidly after admission. A Fast-Track system was introduced to allow GPs direct access to CT in patients with suspected renal colic and to avoid unnecessary admissions.

PATIENTS AND METHODS

Patients were referred directly to the CT Scanning Department, using a faxed proforma. Unenhanced helical CT was performed within seven working days. CT reports were issued to the GP on the day of the examination. Where a stone or other abnormality was detected, direct referral was made to the Urology Department for review within 10 days.

RESULTS

	2003	2004	2005
No of studies	85	171	263
Stones	58 (68%)	68 (40%)	100 (38%)
Other diagnoses	9 (11%)	10 (6%)	24 (9%)
Normal	18 (21%)	93 (54%)	139 (53%)
Interventions	33	25	29
Lithotripsy	13	8	18
Surgery	20	17	11

CONCLUSIONS

Provision of a Fast-Track system dramatically increases referral rates. The increased proportion of normal scans has major implications for radiological workload and radiation exposure. Despite this increase, there has been no change in urological intervention rates.

P030

A prospective randomised trial comparing 16-slice three-dimensional computed tomographic urography versus intravenous urography for percutaneous renal stone surgery

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St George's Hospital, London, UK

INTRODUCTION

We compared 16-slice three-dimensional CT urography (3DCTU) vs. IVU before percutaneous nephrolithotomy (PCNL) in a prospective randomised single centre trial.

PATIENTS AND METHODS

Thirty patients were randomised to 3DCTU or IVU. Outcome measures were time to visualise target stone, time to gain percutaneous access, ease of access graded on visual analogue scale, time to clear target stone and clear all stones, complication rates and stone clearance.

RESULTS

Twelve patients (3DCTU) and 16 patients (IVU) completed treatment. Groups were matched for age, sex, body mass index, side treated, stone burden and pre-operative creatinine. More patients in the 3DCTU group had a supra-12 puncture (6 vs. 1 respectively; $P = 0.02$). There were no significant differences between groups in time to: visualize target stone, gain access, clear target stone or clear all stones. Access was graded significantly easier in 3DCTU vs. IVU group (0.73 vs. 3.74, $P = 0.004$). Stone clearance was more successful in 3DCTU (83%) vs. IVU group (69%) ($P = 0.33$). There were no significant differences in complication rates.

CONCLUSIONS

Percutaneous access was easier and stone clearance better in patients randomised to 3DCTU. There were no differences in operative times and complication rates even though 3DCTU patients underwent significantly more supra-12 punctures.

P031

Primary Extra-corporeal Shock-Wave Lithtripsy (ESWL) is effective for stones less than 2.5 cm independent of calyceal location

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Charing Cross Hospital, London, UK

INTRODUCTION

ESWL has been shown to be successful in management of isolated calyceal stone disease for stones up to 2.0 cm.

AIM

Aim of this study was to determine the effectiveness of ESWL for lower calyceal stones up to 2.5 cm.

PATIENTS AND METHODS

Retrospective review of 272 patients treated with Storz Modulith lithotripter for calyceal stones. Stone size ranged from 3×2 mm to 27×20 mm. There were 56 upper, 56 middle and 196 lower calyceal stones. Patients were divided into successful and unsuccessful groups depending on presence of residual fragment after 3 months.

RESULTS

There were 225 patients (82.72%) in the successful group. The success rates were 85.71% for upper stones, 83.92% for middle stones and 79.59% for lower stones. Independent of location, stones with a maximal diameter of less than 1 cm were associated with a stone-free rate of 79.62% compared to 77.48% for stones less than 2 cm and 77.55% for those with a diameter greater than 2 cm and less than 2.5 cm.

CONCLUSIONS

ESWL is confirmed as an effective method for management of isolated calyceal stone disease. Treatment efficacy was not significantly different among stones localised in upper, middle and lower calyces up to a maximum diameter of 2.5 cm.

P032

Tubeless percutaneous nephrolithotomy in the management of renal calculi

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INTRODUCTION

The role of a nephrostomy tube after percutaneous nephrolithotomy (PCNL) has been subject to debate. We report our experience of a large series of patients who underwent tubeless PCNL.

MATERIALS AND METHODS

A prospective analysis was conducted on a continuous series of patients. In all cases, the track was dilated over a guidewire with a balloon (Cook) to 30°F for 1 minute, followed by placement of an Amplatz sheath. Nephrostomies were inserted for any further planned procedure or for significant haemorrhage. Ureteric drainage was otherwise in the form of a ureteric catheter for 24–48 hours.

RESULT

A total of 187 PCNLs were performed on 181 patients. Of stones, 41 were staghorns, 110 were pelvic, whilst 36 were calyceal. Thirteen patients had a previous PCNL, three had open nephrolithotomy and 52 had lithotripsy. Seventeen procedures (9%) required nephrostomies – six planned nephrostograms, six for track preservation and five for bleeding; 170 renal units did not receive nephrostomies at the time of PCNL. Stone free rate after PCNL was 60%. Five patients (2.7%) had urgent nephrostomies postoperatively for obstruction.

CONCLUSION

This study supports the conclusion that routine nephrostomy insertion after PCNL is only necessary if a specific indication exists.

P033

One-week of ciprofloxacin prior to percutaneous nephrolithotomy (PCNL) in patients with large stones or dilated pelvicalyceal systems significantly reduces upper tract infection and urosepsis – a prospective controlled study

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INTRODUCTION

We previously published that infected upper tracts carried a four-fold risk of urosepsis following PCNL and stones >20 mm or presence of pelvicalyceal dilatation predicted upper tract infection (J Urol 173: 1610–14, May 2005). We subsequently evaluated if one week of pre-operative Ciprofloxacin in these patients reduced urosepsis.

PATIENTS AND METHODS

Patients undergoing PCNL were recruited prospectively with the first 54 patients (previously published) acting as controls. Of the subsequent patients (second phase), those with stones >20 mm or dilated pelvicalyceal system were given Ciprofloxacin 250 mg BD for 1 week prior to surgery. Midstream urine (MSU), renal pelvic urine and fragmented stones were collected for culture and sensitivity. Post-operative Systemic Inflammatory Response Syndrome (SIRS) was used to define urosepsis.

RESULTS

We recruited 105 (54 in the control and 51 in the second phase) patients. Fifty patients in the control arm and 42 patients (received Ciprofloxacin) in the second arm had stones >20 mm and or dilated pelvicalyceal system. There was a three-fold reduction in the risk of upper tract infection ($P = 0.045$) and SIRS ($P = 0.012$) in the patients receiving Ciprofloxacin.

CONCLUSIONS

Ciprofloxacin for a week prior to PCNL in patients with stones >20 mm or dilated pelvicalyceal systems significantly reduces urosepsis.

P034

Clinical evaluation of the Stonebreaker™, a new pneumatic intracorporeal lithotripter

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PURPOSE

The LMA Stonebreaker™ (LMACo, Jersey, Channel Islands) is a novel device invented by the engineers who made the successful Lithoclast® pneumatic intracorporeal lithotripter. This 'second generation' self contained device is much more compact and ergonomic as compared to the Lithoclast, but also has the advantage of being much more powerful, generating a contact pressure of 29 bar; this enables better pneumatic fragmentation and removal of stones during percutaneous nephrolithotomy (PCNL), ureteroscopic stone fragmentation (USF) and vesical lithotripsy (VL).

MATERIALS AND METHODS

A total of 102 patients were prospectively evaluated in this series; 49 PCNLs, 48 USFs and five VLs were performed using the Stonebreaker™. The stone size, position, number of shocks required to fragment the stone to effect complete clearance, and degree of retropulsion were documented in each case; any evidence of urothelial trauma was also noted.

RESULTS

All stones were satisfactorily fragmented and all patients rendered stone free. The number of shocks required were significantly smaller than those usually required when using other pneumatic devices, as was the documented retropulsion. There was no evidence of urothelial trauma at the end of any procedure.

CONCLUSION

The StoneBreaker™ appears to be a safe, effective, robust and compact device for intracorporeal lithotripsy.

P035

Intercostal nerve blockade in percutaneous nephrolithotomy

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INTRODUCTION

Intercostal nerve blockade (INB) is well established in thoracic surgery. In 1990, the technique was first described in percutaneous nephrolithotomy (PCNL) in the Canadian Journal of Anaesthesiology. Since, there has been no prospective evaluation of this technique. We set out to prove the null hypothesis that INB offers no advantage to the patient undergoing PCNL.

PATIENTS AND METHODS

We took 34 consecutive patients undergoing PCNL by a single surgeon in a single institution and prospectively monitored pain scores using a visual analogue scale and analgesic requirements using a patient controlled morphine syringe driver (PCA). We then took a further 43 consecutive patients undergoing PCNL and provided the same anaesthetic but with the addition of INB with local anaesthetic at the end of the operation, prior to the patient waking. These data, along with data concerning time to mobilization and hospital stay were interpreted using bivariate tabular analysis methods.

RESULTS

INB significantly ($P < 0.05$) reduced postoperative immobility and inpatient stay. INB significantly ($P < 0.05$) reduced early postoperative pain scores. INB decreased the amount of analgesia required by patients but not with statistical significance.

CONCLUSIONS

We reject the null hypothesis. We recommend the use of an INB in patients undergoing PCNL.

P036

The importance of urinary pH and diurnal patterns in uric acid stone formation

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INTRODUCTION

A urinary pH less than 5.5 increases uric acid crystallisation. A single low urinary pH does not reflect propensity to stone formation. Urinary pH and its diurnal variation in patients with proven uric acid urolithiasis and controls were measured.

METHODS

Thirty subjects with proven uric acid stones and controls with no history of urolithiasis provided multiple urine samples, which were tested using an electronic pH meter over a 48-hour period. Relevant medical and drug histories were recorded.

RESULTS

Significant differences ($P < 0.001$) existed between the two groups with uric acid patients having a lower average pH (5.3 vs. 6.2) and range of pH (0.6 vs. 1.5) when compared to controls. No significant difference was found in the morning with a low pH in both groups. Diurnal variation existed in the controls with the pH rising during the day, which was not demonstrated in the uric acid patients.

CONCLUSION

A single low urinary pH particularly in the morning is unreliable at determining a propensity for uric acid stone formation. The combination of a low urinary pH persistently below 5.5 with a small range in pH variability is significantly better at determining a patient's risk of forming uric acid stones.

P037

Dietary advice and laboratory investigation of urolithiasis: is current practice evidence-based?

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INTRODUCTION

EAU guidelines and published evidence suggests that urinary tract calculi can be minimised by maintaining a high fluid intake and a reduction in dietary animal protein and salt. No evidence exists to support a reduction in calcium or oxalate for the majority of stone disease. We aimed to investigate whether urologists in our region follow this guidance.

PATIENTS AND METHODS

Fifty-six urology consultants and registrars completed a questionnaire regarding dietary advice and investigation of urolithiasis and an audit was conducted to evaluate the laboratory investigation of 65 patients with stone disease. Twenty patients with urolithiasis also completed a dietary advice questionnaire. Additionally, patient advice leaflets and internet sites were reviewed.

RESULTS

Eighty-nine per cent of clinicians recommended increasing fluid intake, however, only 34% and 27% suggested reducing animal protein and salt intake respectively. Twenty-three per cent recommended decreasing intake of dairy products and 25% decreased tea. Many of the patient leaflets and internet sites were not evidence-based. The audit and questionnaire revealed inadequate investigation of the majority of patients reviewed.

CONCLUSION

The dietary advice and investigation of patients with urolithiasis is inconsistent and often contrary to published evidence. Our research highlights the necessity for training and audit to resolve this issue.

Tuesday 27 June 16.00–17.00
Basic Science: Prostate Cancer
Chairmen: F. Hamdy and H. Leung

P038

Dietary carcinogens and the risk for prostate cancer: A study of metabolic activity in human prostate and in primary culture

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INTRODUCTION

Epidemiological evidence suggests that exogenous chemicals are involved in some cases of prostate cancer. The carcinogenic heterocyclic amines (HCAs) produced by cooking of proteinaceous foods may play a role in prostate carcinogenesis.

MATERIALS AND METHODS

The expression of key xenobiotic-metabolising enzymes (Cytochrome P450 (CYP) 1A1, CYP1A2, N-acetyltransferase 1 (NAT1) or several sulfotransferases (SULTs)) was examined in human prostate tissue and in prostate epithelial cells (PECs) derived from primary culture using western blotting and/or immunohistochemistry. PECs and fresh prostate were incubated with the HCA 2-amino-3-methylimidazo [4,5-f] quinoline (IQ) or its metabolite, N-OH-IQ, and DNA was examined for damage. Incubation of prostate cytosols with N-OH-IQ in the presence and absence of specific co-factors was performed to identify pathways of HCAs activation.

RESULTS

CYP1A1, CYP1A2, NAT1, SULT1A1 and SULT1A3 are expressed in the human prostate or PECs form primary culture. Both NAT1 and SULTs play significant role in the activation of HCAs in prostate. IQ was able to form DNA adducts in PECs indicating metabolic activation.

CONCLUSION

Human prostate expresses the enzymes necessary to activate dietary carcinogens, which may be crucial in determining individual susceptibility to prostate cancer. Primary cultures of PECs may provide a model for studying the metabolic activity in the prostate.

P039

Gene expression profiling of multiple biopsies from primary prostate cancer patients is indicative of a potential global 'field' effect

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INTRODUCTION

We have performed microarray analysis on RNA extracted from human prostate cancer (PC) biopsies, normal prostate tissue, and prostate cancer cell lines.

METHODS

6 × 4 mm punch biopsies were taken from left and right sides of the peripheral zone of the prostate at the base, apex and midzone, for seven different PC patients. Prostatic tissue from two cystoprostatectomies, two diagnostic biopsies from PC patients, and the DU-145 prostate cancer cell line were also obtained. All tissue was sent for cDNA microarray analysis.

RESULTS

Hierarchical clustering and principal component analyses demonstrated that cell line or normal cystoprostatectomy tissue replicates clustered together and separately from the PC patients. Further, similar intra-individual and dissimilar inter-individual gene expression profiles (GEP) were found for all biopsies of all seven patients, irrespective of their histologies (i.e. benign or cancerous).

CONCLUSIONS

Our data suggest that a single 4 mm punch biopsy taken at random for GEP analysis from the gland of a patient with primary prostate cancer provides a representation of the overall GEP of the prostate cancer for that patient. Hence, a single biopsy taken for GEP analysis at the time of clinical diagnosis may provide valuable prognostic information prior to definitive management.

P040

Zonal variation in gene expression in the human prostate

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INTRODUCTION

The human prostate contains three glandular zones (transition, central, peripheral) with widely differing susceptibilities to two of the most frequent medical conditions affecting men, benign prostatic hyperplasia (BPH) and prostate cancer. Most prostate cancer develops in the peripheral zone and BPH develops solely in the transition zone. The reasons for this remain unknown.

MATERIALS AND METHODS

Gene expression analysis was performed on primary epithelial cell cultures and laser microdissected (LCM) epithelium of individual zones of three prostates obtained post mortem from young male organ donors, prior to the manifestation of disease. Affymetrix HG_U133_Plus two arrays were used to identify differential expression. Results were confirmed/validated using Real-time TaqMan Low Density Arrays (Applied Biosystems).

RESULTS

Statistically significant gene expression profiles were generated for each of the three zones. Primary cell cultures generated a distinct expression profile from LCM. Biological relevance was revealed using hierarchical/k-means clustering, functional classification, and pathway analysis. Putative targets and pathways were identified that might explain the variation seen in susceptibility to disease.

CONCLUSION

A gene expression (transcriptome) map of the normal human prostate is provided, which will form an important staging post in the knowledge regarding the development of the normal and diseased prostate.

P041

Mutations in genes of the Wnt signalling pathway and PML in prostate cancer

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The Wnt signalling pathway functions during embryogenesis. Abnormal activity in tumours of the colon, stomach, liver and endometrium is well characterised. Beta-catenin, the central molecule of the pathway, is a co-activator of the androgen receptor. The PML gene is fused to the RAR-alpha gene in acute promyelocytic leukaemia. PML protein expression is reduced in many other cancers, most notably prostate. The PML protein also influences the Wnt pathway. Forty-nine advanced prostate cancer specimens and eight cell lines were analysed. Beta-catenin immunohistochemistry was performed. Neoplastic areas were isolated by laser microdissection. DNA extracted was amplified using Whole Genome Amplification. Genes encoding PML and the Wnt molecules APC, beta-catenin and Axin were amplified using PCR and screened for mutations using denaturing high-performance liquid chromatography. Mutations detected were sequenced bi-directionally. Abnormal beta-catenin immunohistochemistry, suggesting abnormal Wnt pathway activation, was observed in 71% of clinical specimens. One APC mutation, two beta-catenin mutations, three mutations in PML and eight DNA sequence variations in Axin were detected. Four different Axin polymorphisms were found in the cell lines. This work contributes to our understanding of abnormal activation of the Wnt pathway and supports the current interest in the pathway as a potential therapeutic target in prostate cancer.

P042

Mitogenic growth signalling, DNA replication licensing and survival are linked in prostate cancer

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INTRODUCTION

DNA replication licensing occurs at the convergence point of all growth signalling. We investigated linkage between MEK5 and ERK5, both dysregulated in prostate cancer (PCa), and DNA replication licensing proteins Mcm2 and geminin as well as Ki67. We also assess their prognostic value.

METHODS

Stimulated EcR293 cells produced MEK5, leading to ERK5 overexpression. Mcm2, geminin and Ki67 expression was assessed by immunoblotting. Immunohistochemical expression of these biomarkers in human PCa was correlated with MEK5/ERK5 levels and clinicopathological parameters.

RESULTS

MEK5 stimulation resulted in increased ERK5, Mcm2, geminin and Ki67. In human tumours, Mcm2, geminin and Ki67 were all significantly associated with Gleason grade ($P = 0.0002$, $P = 0.0003$, $P = 0.004$), however there was no link with T or M stage. Increased ERK5 expression was linked to increased Mcm2 ($P = 0.003$) and Ki67 ($P = 0.009$) expression. There were significant correlations between Gleason grade and progression of cells traversing G1 phase [Ki67-geminin ($P = 0.001$)], and between high ERK5 levels and both increased licensed non-cycling cells [Mcm2-Ki67 ($P = 0.01$)] and relatively reduced time in G1 phase [geminin/Ki67 ($P = 0.005$)], all indicating a shift towards increased growth potential. Mcm2 was an independent prognostic marker.

CONCLUSIONS

MEK5/ERK5 signalling and origin licensing are closely linked in PCa, and Mcm2 is an independent prognostic marker in this tumour type.

P043

Prostate cancer susceptibility is mediated by interactions between exposure to ultraviolet radiation and polymorphisms in the 5′ haplotype block of the vitamin D receptor gene

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INTRODUCTION

Single nucleotide polymorphisms (SNPs) in the vitamin D receptor (VDR) gene are associated with prostate cancer risk when stratified by ultraviolet radiation (UVR) exposure. We examined the 5′ region of the gene to identify susceptibility SNPs, determine if their associated risk is synergistic and mediated by UVR.

METHODS

We used a questionnaire to assess UVR exposure in 542 prostate cancer and 370 benign prostatic hypertrophy (BPH) patients. We examined the G/A1229, G/C3436, G/A3944, C/T20965 and C/T30056 SNPs at the 5′ end of the gene and F/f30875 in exon 2.

RESULTS

GG3944 genotype was lower in cancer than BPH patients (OR = 0.63, 95% CI = 0.41–0.98). Other genotypes showed no significant association with risk. When stratified into a low UVR exposure group, CC3436 (OR = 0.26, 95% CI = 0.10–0.66), GG3944 (OR = 0.24, 95% CI = 0.09–0.66), TT20965 (OR = 0.22, 95% CI = 0.09–0.57) and TT30056 (OR = 0.18, 95% CI = 0.06–0.52) were associated with reduced susceptibility. The G3944-T20965 haplotype (OR = 0.33, 95% CI = 0.14–0.77); G3944-T30056 haplotype (OR = 0.30, 95% CI = 0.11–0.81) and G3436-A3944-(C/T20965)-T30056 haplotype (OR = 2.37, 95% CI = 1.38–4.08) were associated with susceptibility in low exposure.

CONCLUSIONS

Prostate cancer risk is mediated by UVR and 5′ VDR SNPs. Thus, haplotypes comprising two or more of these 5′ SNPs were significantly associated with prostate cancer risk in men with low UVR exposure.

P044

Serum osteoprotegerin (OPG) levels to monitor disease progression and bone metastasis in prostate cancer

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Recent studies have found elevated serum levels of OPG in patients with advanced prostate cancer, suggesting its role as an indicator of early disease progression. We have analysed the behaviour of serum OPG levels in 381 patients with histologically confirmed prostate cancer over a 3-year follow-up period. Serum OPG levels were measured by ELISA from 381 patients. A total of 208 patients underwent further sequential sampling over the 3-year follow-up period. Young healthy controls (n = 20) and biopsy negative age-matched controls (n = 35) were also analysed. In the absence of bone metastasis, there was no significant difference between patients with organ-confined or locally advanced disease. However, bone scan positive patients had significantly higher OPG levels than those without bone metastases. Androgen abalation therapy did not alter levels significantly, although hormone relapse correlated with significantly elevated OPG levels. Early PSA relapse cases expressed OPG levels that were not significantly different to those with more established hormone-escaped disease. Patients that relapsed from androgen ablation control during the study had significantly higher prior levels of OPG than those that did not, despite no significant difference in PSA levels.

CONCLUSIONS

OPG is a marker of early disease progression and bone metastasis in prostate cancer.

P045

Experimental therapy of prostate cancer cells by viral TK gene transfer and radiolabelled FIAU

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INTRODUCTION

Previous work has shown the combination of herpes simplex virus type 1 thymidine kinase (HSV1-TK) gene and the pro-drug ganciclovir (GCV) to be a promising suicide gene therapy of cancer. An alternative HSV1-TK substrate, 5-iodo-2'-fluoro-2'-deoxy-1-ß-D-arabino-furonosyluracil (FIAU), can be labelled with radioactive iodine. This study investigated the combination of HSV1-TK gene and [^{123}I] FIAU for targeted radiotherapy of prostate cancer and its effect on cell cycle distribution.

MATERIALS AND METHODS

The prostate cancer cell line DU145 was transfected with plasmid pc3.1 DNA-TK. Transfection efficiency was confirmed by [^{123}I] FIAU uptake, GCV sensitivity, and RT-PCR. Cytotoxicity was evaluated by clonogenic assay after incubating cells with different concentrations of [^{123}I]FIAU ranging from 0.01 to 1 MBq/ml for 20 hours. Cell cycle analysis was performed by flow cytometry using FACS Scan. Results were compared with those obtained using a TK-expressing, positive control, osteosarcoma cell line 143B-TK.

RESULTS

DU145-TK cells showed enhanced sensitivity to [^{123}I] FIAU compared with parental cells (IC_{50} = 30.9 kBq/ml; enhancement factor = 4.5; P = 0.001). Following treatment with [^{123}I] FIAU, cells were arrested at G2/M phase: 49.8% of cells treated with 1 MBq/ml compared with 21.9% of untreated cells. Similar alterations in cell cycle distribution were observed following the treatment of 143B-TK cells. In contrast, incubation of DU145-TK or 143B-TK cells with 1 and 0.1 μg/ml of GCV, respectively, had no significant effect on cell cycle progression.

CONCLUSION

The combination of HSV1-TK gene and [^{123}I] FIAU is a potential targeted radiotherapy strategy for prostate cancer. This combination caused significant G2/M phase cell cycle arrest, which warrants further investigation.

P046

BNIP3 expression in prostate cancer specimens: an association with the hypoxia pathway and Gleason grade

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INTRODUCTION

Hypoxia is a common feature in solid tumours due to the generation of a poorly functioning neovasculature. Tumours respond via Hypoxia Inducible Factors (HIFs) which upregulate survival genes involved with angiogenesis, proliferation and glucose transport (e.g. GLUT1). However cell line studies have also shown upregulation of BNIP3, a pro-apoptotic gene. Here we correlate the expression of BNIP3 in prostate cancer specimens with components of the hypoxia pathway (HIF1, HIF2, GLUT1), the androgen receptor (AR) and clinico-pathological variables.

MATERIALS AND METHODS

A tissue microarray of 166 patients who had undergone radical prostatectomy over the previous 10 years was constructed. Immunohistochemistry was used to assess the expression of BNIP3 (both cytoplasmic and nuclear), HIF-1, HIF-2, GLUT1 and AR.

RESULTS

BNIP3 cytoplasmic expression correlated significantly with Gleason score ($P = 0.005$), AR ($P = 0.001$) and GLUT1 ($P = 0.006$) but none of the other clinico-pathological parameters or PSA recurrence ($P < 0.05$). Although there was no association between cytoplasmic BNIP3 and the HIFs, interestingly nuclear BNIP3 significantly correlated with nuclear HIF1 ($P = 0.006$) and HIF2 ($P = 0.013$).

CONCLUSION

These findings demonstrate a relationship between BNIP3 and hypoxia in clinical specimens and an association with Gleason grade. Furthermore, the correlation of BNIP3 with AR suggests another level of control that may exist.

Wednesday 28 June 09.30–10.30
Paediatrics, Transplantation and Diagnosis
Chairs: D. Smith and J. Whiteway

P047

Long-term follow up of patients with redo bladder neck reconstruction for bladder extrophy complex

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AIMS AND OBJECTIVES

To determine whether redo bladder neck reconstruction (redo BNR) is effective in achieving continence, to evaluate its complications and find a better alternative.

PATIENTS AND METHODS

We retrospectively reviewed records of 30 patients having redo BNR (20 boys and 10 girls). The mean age at redo BNR was 9.3 years (range 3.2–15.5 years). Pre operatively patients were divided into three groups: incomplete wetters, continuous wetters and on continuous suprapubic drainage. The patients were investigated with a combination of urodynamics, cystoscopy, cystogram and ultrasound. All patients underwent Mitchell's modification of Young Dees Leadbetter BNR.

RESULTS

Mean follow up was 6.9 years (range 1.2–15.5 years). Post operatively all were using clean intermittent catheterization (CIC) to empty bladder. 18/30 (60%) was dry post operatively, (80% girls and 50% boys). Among dry patients only 3 were doing CIC per urethrally, and 15 were doing CIC via Mitrofanoff. None was continent self per urethrally. Two patients remained on continuous SPC drainage. At night only 50% were dy. Post-operative complications were minimal.

CONCLUSION

Redo BNR cannot achieve continence self per urethrally. Redo BNR is only effective if done with augmentation and diversion. Bladder neck closure may be a better alternative.

P048

Trends in surgical repair of hypospadias in England between 1997 and 2004

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INTRODUCTION

The National Congenital Anomaly System (NCAS) has been used as evidence that the incidence of hypospadias is increasing. However, the accuracy of NCAS data has been questioned. We use data on the frequency of surgical repair of hypospadias to identify trends in the incidence of hypospadias.

METHODS

Data were extracted from HES database of the Department of Health. Boys were included if an ICD-10 code indicating 'hypospadias' and an OPCS-4 indicating 'surgical repair of hypospadias' were present within any of the diagnostic and operative fields of the database. Poisson regression was used to test trend over time.

RESULTS

Between 1997 and 2004, 12 985 boys underwent surgical repair of hypospadias. On average, 1623 surgical repairs were performed each year. This corresponds to a mean incidence of 5.4 per 1000 male births. Incidence of surgical repair did not change significantly during the course of the 8-year study period ($P = 0.185$). Median age at surgery was 2 years.

CONCLUSIONS

These results demonstrated no statistically observable trend in the incidence of surgical repair of hypospadias between 1997 and 2004. Until the problems of ascertainment to NCAS are addressed, data on the incidence of surgical repair represents a useful resource for the surveillance of hypospadias.

P049

Late hypospadias fistulae. Are they real?

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INTRODUCTION

Urethro-cutaneous fistulae occur in 1–23% following hypospadias surgery. Thirty per cent present late defined as occurring after discharge from routine follow-up. Surgery is now performed within the first year of life and patients are frequently discharged prior to toilet training at which point fistula identification is unreliable. This may explain why many series with early surgical intervention and short follow-up report impressive good results. Are these accurate?

METHODS

A total of 530 cases of single stage hypospadias repair performed between 1993 and 2004 were analysed prospectively. The notes of those with fistulae were examined critically to establish whether they were early, late or missed early fistulae.

RESULTS

A total of 33 (6.2%) patients developed a fistula, 12 (33%) of which presented late, including one patient with two fistulae. 9/13 (69%) fistulae presented following toilet training and with critical review it is probable all these were missed because of early discharge. Only 4/13(31%) late fistulae were truly a late development.

CONCLUSION

9/33 (27%) fistulae are missed if patients are discharged before toilet training. Late development of fistulae is a recognised entity. However the true incidence 4/33 (12%) is less than initially reported. Any paper reporting fistulae in patients prior to toilet training should not be accepted as they will be inherently inaccurate.

P050

Can serum creatinine at 3-month predict graft outcome in allografts from non heartbeating (NHBD), living donors

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INTRODUCTION

Serum creatinine before 1 year is currently considered unreliable for predicting graft outcome. The aim of this study is to determine relevance of graft function at 3 months to subsequent outcome in kidneys obtained from different donor sources.

MATERIALS AND METHODS

The study group comprised of all renal transplants performed at a single centre between 1st January 1985 and 31st December 2003. Data was obtained from case note review and transplant database. Only patients with graft survival beyond 3 months were studied. Complete data was available for 1087 renal transplants (HBD, n = 922; LRD, n = 100; NHBD, n = 70). Patients were grouped into three categories (S-Creatinine < 150, 150–250, and >250 mmol/l).

RESULTS

Mean S-Creatinine for HBD, LRD and NHBD kidneys was 162.6 ± 2.5, 153.4 ± 10.1 (P = 0.02, MWU) and 173.6 ± 7.4 (P < 0.018) respectively. Median graft survival is shown in table.

TABLE 1: Graft Survival (Years)

S. creatinine	HBD	LRD	NHBD
<150	25	>25	6.7
150–250	12.5	12.3	>6
>250	5	0.5	4.2

CONCLUSION

Serum Creatinine at 3 months reliably predicts graft outcome. NHBD kidneys tend to have a higher serum creatinine at this time. Their outcome is favourable if the S-Creatinine is <250 mmol/l.

P051

The use of urinary catheters following urogenital surgery in adults: evidence from a cochrane review

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INTRODUCTION

Urinary catheters are frequently used following urogenital surgery. The purpose of this review was to establish the optimal use of urinary catheters following urogenital surgery in adults according to published evidence from randomised controlled trials.

METHODS

Relevant trials were identified from the Cochrane Incontinence Group trials register. Two authors independently evaluated trial eligibility and quality. Data was extracted and analysed as described in the Cochrane Reviewer's handbook.

RESULTS

Thirty-nine randomised trials met the predefined inclusion criteria. Amongst the main findings were: fewer patients were recatheterised if a catheter was used compared to no catheter (RR 0.32, P = 0.005); more patients were recatheterised if a urethral catheter as opposed to a suprapubic catheter was used (RR 3.66, P = 0.008); different durations of catheter use had no effect upon the incidence of UTI; there was no difference in the incidence of recatheterisation after catheter removal at midnight or 0600 hours.

CONCLUSIONS

Good quality trials are needed to address the variety of important strategies related to short-term catheter use following urogenital surgery before more reliable conclusions can be drawn. There is also a need for the conclusions drawn from this review to be further qualified by more adequate cost-effectiveness analyses and patient-assessed outcome measurements.

P052

Improving patient comfort during flexible cystoscopy insertion by increasing hydrostatic pressure (Bag Squeeze). A randomised, controlled study

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INTRODUCTION

Flexible cystoscopy is well tolerated by the vast majority of patients. However, although topical anaesthetic jelly is regularly administered, our impression is that discomfort is still felt as the cystoscope traverses the external sphincter, prostate and bladder neck regions. We studied the effect of increasing the hydrostatic pressure by simple manual compression of the irrigation solution bag (500 ml saline 0.9%) to distend the urethra during this part of the examination.

PATIENTS AND METHODS

A total of 151 male patients undergoing diagnostic and review flexible cystoscopies were randomised to bag 'Squeeze' (N = 72) or 'No Squeeze' (N = 79) as the cystoscope was passed from below the external sphincter until after the bladder neck was negotiated. All patients had 10 ml lidocaine jelly beforehand. A 10-point visual analogue pain scale assessing cystoscopy insertion was completed after the procedure.

RESULTS

The mean pain score was 1.38 (95% CI 0.99 to 1.77) in the squeeze group and 3.00 (95% CI 2.55 to 3.46) in the non-squeeze group (P < 0.0001, Mann–Whitney U test).

CONCLUSION

The 'bag squeeze' technique during insertion of a flexible cystoscope significantly decreases the discomfort of the procedure. It is strongly recommended in all male patients.

P053

Outpatient flexible cystoscopy using a disposable slide-on endosheath system

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AIM

The study was set up to investigate the feasibility of outpatient flexible cystoscopy using the endosheath endoscope system (EndoSheath®; Vision Sciences).

MATERIALS AND METHODS

Twenty-seven patients awaiting diagnostic or check cystoscopy in Leeds, UK, were invited to undergo outpatient flexible cystoscopy using a CST-2000 Flexible Cystoscope (Vision Sciences; Natick, MA) with the sterile single-use slide-on disposable endosheath endoscope system (EndoSheath®; Vision Sciences). The performance of the cystoscope was evaluated, and the patients' experiences were documented using a questionnaire.

RESULTS

The outpatient setting proved to be ideal for flexible cystoscopy using this system. The cystoscope was rated highly for image quality, ease of use and handling. A patient turnover of 5 minutes was possible with a single instrument. All patients preferred outpatients to a day-ward or theatre attendance for the same procedure.

CONCLUSIONS

This study demonstrates that it is possible to perform outpatient flexible cystoscopy safely, economically and efficiently with the aid of a disposable endoscope system.

P054

Is urine cytology a worthwhile diagnostic test in modern urology?

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INTRODUCTION

Urine cytology is traditionally a key investigation in the management of haematuria. While relatively specific, it lacks sensitivity and is costly due to the skilled manpower required for analysis. We look at how useful cytology currently is in the diagnosis of urothelial malignancies.

METHODS

An audit of annual urine cytology usage was undertaken using the pathology reporting system to identify requests in a district general hospital. Patient notes were obtained to gain further clinical information on the results of other investigations, diagnosis and management.

RESULTS

A total of 849 cytology requests were received: 17 were reported as atypical, 30 suspicious of malignancy and 10 highly suspicious of malignancy. Twenty-two urothelial tumours were diagnosed in this series. Urine cytology per se enabled the diagnosis to be made in three patients and altered the management in two others. Total expenditure was £14 772 with the cost per critical cytological diagnosis of £4924.6.

CONCLUSION

Urine cytology was mainly positive in high-grade urological malignancy. There were few cases where cytology alone facilitated the diagnosis. Significant cost and time savings can be made if cytology is only sent in cases of diagnostic uncertainty. Simple guidelines and staff education are vital in reducing inefficiency while maximising relevant diagnostic pickup.

P055

Day case TURBT

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Reservations about day surgery provision of TURBT hinge on the adequacy and safety of the procedure in this setting. The adequacy is judged by tumour recurrence rates and sampling of muscle, particularly on initial resection. We have reviewed 132 TURBTs in 98 patients, recording presence of muscle at histology, tumour grade and stage, complications, admissions, recurrence at next cystoscopy and grade of surgeon. Of resections, 61 were the initial resection and muscle was evaluable on microscopy in 67%. Of the remainder, the majority were Ta tumours. Recurrence rate at first check cystoscopy was 20%. Of cases having a subsequent resection, 55% yielded muscle and recurrence rate was 33%. Eleven patients (8.3%) required admission from day unit, and three later, mainly for bleeding, retention or UTI. Operator was a consultant in 55% of cases and registrar in 45%. We feel these results suggest TURBT is a suitable procedure for day surgery in selected cases with acceptable levels of oncological care in terms of muscle sampling and recurrence. The admission rate is higher than the norm, but seems acceptable for this extension of day care.

P056

Urology teaching for undergraduates. Problem based learning, conventional teaching or both?

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INTRODUCTION

Conventional lecture based teaching has been replaced with problem based learning (PBL) in many medical schools. The North West Region Urology Trainers Committee felt that medical student exposure to urology was diminishing and as a result their urological knowledge and skills were suffering. A conventional lecture based urological study day was organised to cover common aspects of urology.

METHODS

A study day for final year medical students was organised. Feedback was collected in the form of a questionnaire. The students were asked to score the content and presentation of each lecture out of 10. An overall score was then generated for each lecture. Comments were invited.

RESULTS

Two hundred and twenty five final year medical students attended the course. The mean score for all lectures was 8.58 (Range 7.91–8.96). Thirty-five per cent of students spontaneously asked for more teaching in this structured format.

CONCLUSION

There is still a role for more conventional methods when teaching medical students, and these should be used in conjunction with PBL. Postgraduate training is changing with career pathways being decided earlier. Undergraduate exposure to urology is therefore essential to ensure competency and also to ensure that all students at least consider urology as a career pathway.

P057

Attitudes of urological patients towards supplementary remote consultation (Telerounding) in the immediate postoperative period

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INTRODUCTION

Increasing demands on consultant urologists and geographical limitations in delivering patient care at different units on a real time basis have forced us to explore new methods to supplement the follow up of post surgical urological patients. We conducted a questionnaire survey of patient attitudes towards remote consultant follow up based on a remote teleconsultation model we developed.

PATIENTS/METHODS

Patients who had undergone elective urological procedures were subjected to a questionnaire on the day of discharge about their attitudes towards remote follow-up. Patients were briefed about a nurse lead mobile wireless computer aided link model through which the consultant can do follow-up rounds remotely.

RESULT

One hundred and sixty patients responded (100% response rate); age range 19–88 (average 54); 76 males and 84 females. Hundred per cent stated they would prefer daily consultation remotely or otherwise by a consultant vs. other modes of consultation in which consultants may not be seen daily. Ninety-six per cent of the respondents were willing to use telerounding.

CONCLUSION

Telerounding as a supplementary means of patient follow-up in the post surgical urological patient is a welcome option by the majority of patients. This study gives further evidence in favour of remote teleconsultation.

Wednesday 28 June 11.00–12.00
Andrology: Erectile Dysfunction and Penile Reconstruction
Chairmen: D. Ralph and T. Terry

P058

The clinical outcome of skin grafting for penile cancer

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INTRODUCTION

Carcinoma of the penis is an uncommon malignancy. Former surgical practice was to offer a partial or total penectomy. This mutilating treatment led to the loss of sexual function and urinary difficulties. The latest surgical techniques (using split thickness skin graft, STSG, on the glans and full thickness on the shaft) offer improved cosmesis with preservation of function.

PATIENTS AND METHODS

Retrospective case note review of penile cancer patients (63) that had conservative surgery 1998–2005. The patients were assessed for graft take, cosmesis, function and complications. Forty-eight patients had a glansectomy with a 'neo-glans' (STSG). Two patients had extensive CIS and had glans resurfacing using STSG. Thirteen patients had a minor partial penectomy involving excision of the corporal heads. Five patients had extensive penile shaft skin involvement requiring full thickness grafting.

RESULTS

Mean follow up 9.6 months. (i) All, except 1, were satisfied with the cosmetic result; (ii) five patient's required partial amputation for residual tumour and (iii) one patient, the graft failed and had to be re-grafted (previous radiotherapy).

CONCLUSION

Local excision and skin grafting offer a reproducible, highly acceptable surgical treatment for penile carcinoma. Oncological clearance can be achieved with conservative surgery.

P059

Urinary symptoms and sexual function following conservative penile surgery for carcinoma of the penis

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OBJECTIVE

We evaluated the functional impact of conservative penile surgery by assessing the sexual function and lower urinary tract symptoms in patients with Ca penis.

PATIENTS AND METHODS

All patients (39) who underwent conservative surgery over 4 years were considered. Patients were asked to complete three validated questionnaires, The International Index of Erectile Dysfunction (IIEF), Sexual Encounter Profile (SEP) and International Prostate Symptoms Score (IPSS) along with additional questions assessing the impact on self-image and relationship with partners input.

RESULTS

Twenty-four patients were eligible and completed the questionnaires. There were no significant differences in the mean pre and post op. IPS scores 6.52 vs. 6.43 ($P = 0.8$). Fifteen patients (62.5%) were sexually active and their IIEF and SEP questions showed reduction in the erectile and orgasmic functions and intercourse and overall sexual satisfaction after surgery ($P < 0.007$). However, the masculine self-image remained unaffected (63%) with no change in the relationship reported by 70% of patients and 65% of partners.

CONCLUSION

Patients who undergo conservative penile surgery do not experience worsening of urinary symptoms. In the preoperatively sexually active group there was decrease in erectile function and sexual satisfaction. However, in the majority this did not affect their sexual relation or masculine image.

P060

A comparison of Nesbit's procedure versus plaque incision and grafting for Peyronie's disease

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OBJECTIVE

To compare the surgical outcome of Nesbit's operation with plaque incision and grafting (PIG) in 115 patients undergoing surgical correction of Peyronie's disease.

METHODS

Between 1998 and 2004, the surgical outcome of 65 patients undergoing the Nesbit's operation was compared with 50 patients undergoing PIG for Peyronie's disease. Outcome measures included residual deformity, erectile function and patient satisfaction rates with particular reference to penile shortening. Mean age was 56 years and mean follow up was 11 months.

RESULTS

	Nesbit	Plaque incision and grafting
Deformity – Dorsal	52%	64%
Dorsolateral	29%	24%
Ventral	5%	4%
Complex waist	0%	12%
Mean angle	63°	61°
Penis straight	86%	84%
< 15 deg	7%	6%
Pre – op ED	31%	32%
Improved ED	5%	12%
New ED	17%	30% ($P > 0.05$)
Unaided Coitus	53%	50%
Penile shortening > 2 cm	21%	18%
Overall satisfaction	85%	76% ($P > 0.05$)

CONCLUSION

Both procedures were equally effective in straightening the penis with similar satisfaction rates. There was more penile shortening with a Nesbit operation but an increase in post-operative ED with grafting. Overall the more complex deformities were grafted.

P061

Investigation of novel therapeutic options to prevent irreversible cavernosal smooth muscle dysfunction in low flow priapism

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INTRODUCTION

Failure of penile detumesence in priapism following alpha agonist instillation is an indication for surgical intervention. The aim of this study was to use an *in vitro* model of low flow priapism to investigate novel pharmacotherapies in preventing irreversible smooth muscle dysfunction.

MATERIALS AND METHODS

Strips of rabbit corpus cavernosum were mounted in organ baths and precontracted with phenylephrine. Following a 4-hour perfusion period in ischaemic conditions, strips were reperfused. Experiments were repeated in the presence of antioxidants, glutathione/N-acetylcysteine, or adding digoxin, Ca^{2+}, Bay K 8644 and L-NAME.

RESULTS

After reversing 4 hours ischaemia, the tone recovered to 16.5 ± 2.3%. In the presence of antioxidants the tone recovered to 15.2 ± 3.9% using glutathione and 15.5 ± 1.7% using N-acetylcysteine. Addition of exogenous Ca^{2+} resulted in recovery of tone to 31.7 ± 9%. Digoxin, Bay K 8644 and L-NAME had no effect on the recovery of tone.

CONCLUSIONS

Neither inhibition of reactive oxygen species nor prevention of nitric oxide production prevents smooth muscle dysfunction. Furthermore, stimulating transmembrane calcium flux fails to increase muscle tone, although adding exogenous calcium does. Increasing the calcium concentration within the corporal washout fluid may offer a therapeutic option to increase corporal smooth muscle tone and reverse a priapic episode.

P062

Systemic vascular abnormalities in Peyronie's disease

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INTRODUCTION

Patients with Peyronie's Disease (PD) commonly have one or more risk factors for endothelial dysfunction and atherosclerosis (RFs). We hypothesise that PD is associated with systemic vascular changes even in the absence of RFs.

PATIENTS AND METHODS

Vascular function was assessed using high-resolution ultrasound in 21 PD patients (aged 30–65 years) without RFs and 21 age-matched healthy controls. Endothelium nitric oxide release-dependent, flow-mediated brachial artery vasodilatation (FMD) was measured in response to increased shear stress (reactive hyperaemia induced by forearm-cuff inflation and then deflation). This response was contrasted with that to 400 μg sublingual glyceryl trinitrate (GTN), (endothelium-independent vasodilator). Anthropometric characteristics, blood pressure, fasting lipids and glucose were measured.

RESULTS

Baseline forearm bloodflow and flow response to ischaemia was greater in PD patients. Despite this, endothelium-dependent vasodilatation (FMD) was impaired in PD patients compared to controls (5.68 ± 2.92 vs. 7.4071 ± 2.66%, $P < 0.05$). Blood pressure, lipids, glucose arterial distensibility, and responses to GTN were similar in PD patients and controls.

CONCLUSIONS

Patients with PD have evidence of systemic conduit artery endothelial impairment as well as altered resistance vessel function even in the absence of RFs. These wider vascular abnormalities in PD are likely to be of clinical relevance and require further study.

P063

The effect of hyperbaric oxygen therapy (HBOT) on erectile function recovery in the rat cavernous nerve injury model

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INTRODUCTION

It has been postulated that cavernosal oxygenation is important for the preservation of erectile tissue health. The rat cavernous nerve (CN) crush model is recognized as a reliable means of assessing functional and structural sequelae of cavernous nerve injury. This study was designed to define the effect of hyperbaric oxygen therapy (HBOT) on erectile function and cavernosal tissue structure in this model.

METHODS

Four groups of five Sprague-Dawley rats each, underwent bilateral CN crush or laparotomy only (sham) followed by either 10 days of HBOT (90 minutes at three ATM) or no treatment after which the animals underwent CN stimulation with measurement of intracavernosal pressure/mean arterial pressure (ICP/MAP) ratios. Whole corporeal bodies were stained for immunohistochemical analysis.

RESULTS

CN crush animals, which received HBOT had significantly better ICP/MAP ratios than the corresponding non-HBOT group (55 vs. 31%, $P = 0.005$). Similarly, NGF and eNOS staining densities were higher in the CN crush group that received HBOT compared to no HBOT.

CONCLUSIONS

HBOT following CN injury improves erectile function preservation in this model. This analysis raises questions regarding the role of the clinical application of HBOT in patients after radical prostatectomy and may support the concept of cavernosal oxygenation as a protective mechanism for erectile function.

P064

An audit of the presentation and management of ischaemic priapism

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INTRODUCTION

Priapism is a urological emergency. Prompt surgical intervention will determine successful outcome. The aim of this study was to review the management of priapism at a tertiary referral centre.

PATIENTS AND METHODS

A case-note review of patients was carried out, recording parameters including aetiological factors, duration prior to presentation, origin of referrals, nature of intervention and outcomes.

RESULTS

Sixty-two patients with a mean age of 40 years (median 41 years, range 7–75) with the mean duration at initial presentation of 86 hours (median 36 hours, range 6–1002). Fifty per cent of patients presented after 36 hours. Aetiologies were: idiopathic (35.5%), haemoglobinopathy (16.1%), iatrogenic (12.9%), self-inflicted (e.g. recreational Viagra) (14.5%), post-traumatic (8.1%) and others (12.9%). Forty-seven (90%) received corporal aspiration with intra-corporal injection of an alpha-adrenergic agent in 29 (56%). Twelve (19%) received between 1 and 4 shunt procedures prior to referral. Twenty-seven (44%) had acute placement of a penile prosthesis. The risk of operative intervention/penile prosthesis insertion presenting 20 hours or more were 65% and 52.5% (20 and 1.3% if <20 hours) respectively.

CONCLUSION

There is an unacceptable delay between the presentation of priapism and treatment, whilst interventions are not standardised. Appropriate national guidelines, protocols and health education need to be developed to improve patient outcome.

P065

Frenular grafting – an alternative to circumcision

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INTRODUCTION

Frenuloplasty lengthens the frenulum at the expense of narrowing the inner prepuce. It is therefore contraindicated in patients that already have a degree of phimosis. In patients who do not wish to have a circumcision an alternative procedure, described here, is to skin graft the frenular bed after its division, thereby both lengthening the frenulum and widening the prepuce.

PATIENTS AND METHODS

A total of seven patients, with a mean age of 25 years (range 18–35 years), presented with a combination of a tight frenulum and phimosis. The operation consists of a wide transverse incision in the frenulum to create the classical diamond shaped defect. A skin graft is then sutured into the defect and the foreskin replaced over the glans. The donor site used for the graft was initially inner thigh (n = 2) and latterly a horizontal ellipse of dorsal inner preputial skin.

RESULTS

All patients are sexually active and are happy with the result of surgery at a mean follow up of 10 months. Graft take was 100%, the foreskin retractable in all and no revision surgery needed.

CONCLUSIONS

Frenular grafting is a minor procedure that is reliably successful and allows the patient to maintain his foreskin.

P066

Sildenafil reverses the superoxide-mediated up-regulation of PDE5 induced by nicotine, in rabbit penile vascular smooth muscle cells: a new mechanism for erectile dysfunction and its treatment in smokers

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OBJECTIVE

Erection is mediated by the nitric oxide/cGMP pathway, which is regulated in part by PDE5 activity. As PDE5 hydrolyses cGMP, an increase in PDE5 expression may lead to erectile dysfunction (ED). This study investigated the effects of nicotine on PDE5 expression, the role of superoxide (O2-) in its mediation, and the subsequent influence of sildenafil on this.

METHODS

Penile smooth muscle cells cultured from rabbit cavernosal tissue, were incubated with increasing concentrations of nicotine for 16 hours [±superoxide dismutase (SOD), catalase, apocynin (NADPH oxidase inhibitor), or sildenafil]. Western blot analysis of PDE5 protein was performed. O2- formation was determined using ferricytochrome C reduction.

RESULTS

PDE5 expression was upregulated by nicotine, optimal at 10 μM (n = 6) compared to control (P = 0.0082). This was reversed by co-incubation with SOD, catalase, sildenafil (1 nm–10 μm) ($P < 0.05$). Nicotine induced a significant increase in O2- formation compared to control (n = 6, $P < 0.05$). This was reversed by co-incubation with SOD, catalase, apocynin, and sildenafil 1 μm ($P < 0.05$).

CONCLUSION

Nicotine increases O2- production in rabbit penile VSMC's, which is associated with an up-regulation of PDE5 expression. Sildenafil reverses this effect, through inhibiting O2- production. This constitutes a novel mechanism for ED and the effect of sildenafil, in smokers.

P067

The use of dermal fillers in Andrology

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INTRODUCTION

Dermal fillers are used in aesthetic medicine to augment a particular region of the body, commonly the face. This paper described their use in Andrology.

PATIENTS AND METHODS

Hyaluronic acid gel (Restylane®, Pureagen®) was injected subdermally, using a 27G needle and without anaesthetic, into the penis of 25 patients in the Andrology clinic. The indications for treatment were: Peyronie's Disease indentations (n = 6), soft glans syndrome (n = 2) and girth augmentation (n = 17). In the Peyronie's patients an artificial erection was given to highlight the indentation to be filled. Measurements pre and post treatment and satisfaction rates were recorded.

RESULTS

The volume of filler injected ranged from 2 to 12 ml. All the Peyronie's patients were satisfied with the uniform shape of their penis. Both patients with the soft glans syndrome found the injection painful, limiting the amount injected and reduced the desired result. In the augmentation group the penile girth increased from a mean of 8.6 cm (7.8–9 cm) to 10.2 cm (9.2–11 cm). All patients were satisfied but 10 patients requested additional injections.

CONCLUSIONS

The use of dermal fillers are simple to use and may defer patients from seeking surgery for otherwise cosmetic reasons.

Wednesday 28 June 11.00–12.00
Basic Science: Physiology
Chairs: A. Brading and J. N'Dow

P068

Characterisation of the cholinergic component to the regulation of human prostatic contractility

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INTRODUCTION

The aim of this study was to investigate the synergistic influence of carbachol upon phenylephrine induced contractures in a human prostate preparation, through contractility experiments and characterisation of the receptors mediating this effect using selective muscarinic antagonists.

METHODS

Prostate chips obtained with informed consent and ethical committee approval were attached to an isometric force transducer and superfused with a physiological solution. Agonists and antagonists were added to the superfusate to elicit contractile responses. Data are mean ± SD, differences tested using Students *t*-test.

RESULTS

In one series, in 17 of 28 (61%) strips showing reproducible contractures to 3 mM phenylephrine, 3 mM carbachol enhanced these contractures to 203.7 ± 90.5% of control (=100%). Carbachol also sensitised the response to phenylephrine (EC_{50} 4.7 ± 1.1 to 2.3 ± 1.5 μM, $P < 0.001$). The use of selective muscarinic antagonists revealed greatest sensitivity of this phenomenon to 4-DAMP with a pIC_{50} of 7.73 ± 0.74 ($n = 6$;IC_{50} 18.5 nM).

CONCLUSIONS

Although carbachol only generates a relatively small response alone, it markedly augments the contractile response to the a-agonist phenylephrine, in a proportion of prostate smooth muscle preparations. This synergistic mechanism appears to be predominantly mediated through the M3 receptor, which is selectively blocked by 4-DAMP.

P069

Effects of Hexamethonium and Pancuronium on volume induced spontaneous activity in the isolated bladder

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INTRODUCTION

The isolated guinea pig bladder generates spontaneous, co-ordinated activity resulting in transient rises in intra-vesical pressure, which can be augmented by the muscarinic agonist arecaidine. Transient frequency increases with increasing volume, with a rapid reduction resulting in quiescence followed by gradual return in activity. This complex response suggests a 'local reflex' within the bladder wall that may involve intra-mural ganglia (Lagou et al. BJUI 2004; 94(9): 1356–136). To explore this idea further the effects of Hexamethonium and Pancuronium were investigated.

MATERIALS AND METHODS

Bladders were isolated from female guinea pigs ($n = 6$), cannulated per urethra and placed in Tyrodes solution containing 100 nM arecaidine. Effects of Hexamethonium/Pancuronium upon frequency at basal volume (f_b), frequency following a 2.5 ml volume increase (f_{inc}) and on the quiescent period ('Inhibitory Phase') were assessed.

	Pancuronium			Hexamethonium		
	Control	3 μM	10 μM	Control	3 μM	10 μM
f_b (Hz)	0.034 (0.004)	0.021* (0.004)	0.019* (0.005)	0.033 (0.003)	0.034 (0.004)	0.035 (0.004)
f_{inc} (Hz)	0.049 (0.009)	0.038* (0.013)	0.034* (0.013)	0.045 (0.008)	0.047 (0.008)	0.046 (0.006)
IP (sec)	232 (80)	306* (72)	402* (155)	218 (89)	340* (84)	299* (100)

*$P < 0.05$.

RESULTS

Both drugs significantly prolonged the inhibitory phase (IP). However, only Pancuronium affected frequency. [table; mean (SD)].

CONCLUSION

Nicotinic receptors may be involved in modulation of volume-induced activity. Effects of Hexamethonium suggest a role for ganglia in co-ordinating the return of activity following the inhibitory phase. However, effects of Pancuronium suggest the presence of a different nicotinic receptor that may be involved in the generation of augmented activity and the volume response.

P070

The effects of a c-kit tyrosine inhibitor on guinea-pig and human detrusor

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INTRODUCTION

Interstitial cells of Cajal (ICC) are pacemakers of smooth muscle activity in the gut. They express c-kit receptors, and ICC-like cells have been identified in the bladder. We assess the effects of the c-kit inhibitor, Glivec (imatinib mesylate), on human detrusor strips and guinea-pig cystometry, and examine the distribution of c-kit-positive cells in bladder dysfunction.

PATIENTS AND METHODS

'Normal' and overactive human detrusor strips were exposed to Glivec, and stimulated with carbachol (CCh) or electrical field stimulation (EFS). C-kit antibody was used for immunohistochemical investigation. Guinea-pig urodynamic studies were performed following intravenous Glivec.

RESULT

Glivec (10–6M) markedly inhibited evoked detrusor contractions and spontaneous activity in overactive human tissue, with lesser effects on 'normal' detrusor. Glivec (10–5M) improved bladder capacity and compliance, and reduced spontaneous activity during guinea-pig cystometry. Anti-c-kit labelling demonstrated significantly increased numbers of ICC-like cells in overactive human detrusor compared to 'normal'.

CONCLUSION

Glivec exerted inhibitory effects on guinea-pig and overactive human detrusor, possibly by directly acting on c-kit receptors on ICC-like cells. This result, and the possibility that there are changes to the number of ICC-like cells in bladder overactivity suggests that the c-kit receptor may provide a novel target for the treatment of detrusor overactivity.

P071

Purinergic activity in the urothelium of bladder with idiopathic detrusor overactivity

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ATP may have an important role in pathogenensis of functionally abnormal bladder. The aim of this study was to measure the ATP release from the urothelium of bladders with idiopathic detrusor overactivity.

Bladder tissue with urodynamically proven idiopathic overactivity ($n = 8$) was obtained. The urothelium was stretched to 150% of its original length and ATP released was quantified using a luminometer. This was compared with the ATP release from control bladder tissue.

The urothelium from bladders with idiopathic overactivity showed significantly greater ATP release on stretching when compared to the control bladders ($P < 0.05$). The enhancement was evident when ATP release was expressed in absolute values (2930.1 ± 425.9 pM/g of tissue in idiopathic overactive bladders vs. 77.6 ± 16.2 pM/g in controls) or as the percentage increase from basal levels (129.4 ± 18.5% in idiopathic overactive bladders vs. 37.2 ± 6.3% in controls). TTX (5 μM) blocked 15% of ATP release in overactive bladders, which was similar to the control bladders (18%).

In overactive bladders there was significantly increased non-neuronally released ATP as compared to controls. This would suggest that in bladders with idiopathic detrusor overactivity, there is increased purinergic activity in the urothelium that may play an important role in the pathogenesis of this condition.

P072

Effects of α/β-methylene-ATP on autonomous and volume induced activity in the isolated bladder

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INTRODUCTION

The isolated guinea pig bladder generates spontaneous, co-ordinated activity resulting in transient rises in intra-vesical pressure, which can be augmented by the muscarinic agonist arecaidine. Increasing intravesical volume increases transient frequency and rapid decrease leads to quiescence followed by gradual return in activity, suggesting a 'local reflex' within the bladder wall (Lagou et al. BJUI 2004; 94(9): 1356–65). ATP is known to be released from the urothelium in response to mechanical distortion. Therefore, these experiments were performed to explore effects of ATP on these reflexes.

MATERIALS AND METHODS

Bladders were isolated from female guinea pigs (n = 6), cannulated per urethra and placed in Tyrodes solution containing 100 nM arecaidine. Effects of α/β-methylene-ATP upon frequency at basal volume (f_b), frequency following a 2.5-ml volume increase (f_{inc}) and on the quiescent period ('Inhibitory Phase') were assessed.

RESULTS

Both 100 nM and 300 nM α/β-methylene-ATP prolonged the inhibitory phase (IP) and significantly increased frequency at basal volume and at 2.5 ml, [table; mean (SD), *P < 0.05].

	Control	100 nM	300 nM
IP (sec)	160 (38)	352* (20)	421* (70)
f_b (Hz)	0.033 (0.01)	0.056* (0.025)	0.050* (0.023)
f_{inc} (Hz)	0.052 (0.012)	0.091* (0.028)	0.078* (0.077)

CONCLUSION

In addition to a novel role for ATP in local bladder reflexes the effects of α/β-methylene-ATP suggest the presence of two or more functionally relevant purinergic receptors.

P073

Cool and menthol receptor TRPM8 in human urinary bladder disorders and its clinical correlations

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INTRODUCTION

The recent identification of the cool-menthol receptor TRPM8 in the urinary bladder and its influence on cystometric parameters, provides an opportunity to advance our understanding of its role in bladder dysfunction. We report the distribution of TRPM8 in human urinary bladder disorders, and its relationship with clinical symptoms.

METHODS

Bladder specimens obtained from patients with painful bladder syndrome (PBS, n = 16), idiopathic detrusor overactivity (IDO, n = 14) and asymptomatic microscopic haematuria (controls, n = 17) were immunostained using antibodies to TRPM8; nerve fibre and urothelial immunostaining were analysed using fibre counts and computerized image analysis respectively.

RESULTS

TRPM8-immunoreactivity was observed in the urothelium and nerve fibres scattered in suburothelium. The nerve fibre staining was seen in fine-calibre axons and thick (myelinated) fibres. There was marked increase of TRPM8-immunoreactive nerve fibres in IDO (P = 0.0249) and PBS (P < 0.0001) specimens. Urothelial TRPM8 appeared unchanged. The TRPM8-immunoreactive fibres significantly correlated with the Frequency (P = 0.0004) and Pain (P < 0.0001) scores, but not Urgency score.

CONCLUSION

This study demonstrates increased TRPM8 in nerve fibres of overactive and painful bladders, and its relationship with clinical symptoms. TRPM8 may play a role in the symptomatology and pathophysiology of these disorders, and provide an additional target for future overactive and painful bladder pharmacotherapy.

P074

The effect of β-adrenoceptor agonists on detrusor contraction in the presence and absence of urothelium

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INTRODUCTION

Stimulating muscarinic receptor in bladder urothelium is known to cause the release of a diffusible factor that inhibits contractions of the detrusor muscle. The relaxation of detrusor muscle via β-adrenoceptors is thought to contribute to the urine storage. However, the relation between urothelium and β-adrenoceptors is unclear. Therefore we investigated whether the relaxations of bladder induced by β-adrenoceptor agonists are affected by the urothelium.

MATERIAL AND METHODS

Paired longitudinal strips of pig bladder were isolated, the urothelium was removed from one strip per pair and tissues were set up in gassed Krebs solution at 37°C. Cumulative concentration-response curves to carbachol were constructed and also relaxation responses to isoprenaline and BRL37344 (β-adrenoceptor agonist) obtained.

RESULTS

Contractile responses to carbachol were depressed by 35% in the presence of the urothelium. The non-selective β-agonist isoprenaline relaxed carbachol precontracted tissues, the potency being similar in the absence (EC50 = 0.06 μM) or presence (EC50 = 0.07 μM) of the urothelium. Maximum responses were also similar. The β-selective agonist BRL37344 also relaxed tissues equally in the absence or presence of urothelium.

CONCLUSIONS

These data suggest the urothelium does not influence the relaxation of smooth muscle by β-adrenoceptor agonists.

P075

Nitric oxide regulates smooth muscle contraction of the seminal vesicle

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The Institute of Urology, London, UK

INTRODUCTION

The patho-physiological mechanism of premature ejaculation is poorly understood. Abnormal neurotransmission in the smooth muscle from seminal vesicle (SV) may underlie this. The aim of this study was to identify the relaxant neurotransmitter modulating smooth muscle contractility of the SV.

METHODS

Guinea-pig SV muscle strips were mounted in organ baths and EFS contractions were elicited (0.1ms, 10–100 Hz). Contractions were studied in the presence of tetrodotoxin, L-NAME, D-NAME, L-arginine and a combination of L-NAME and L-arginine.

RESULTS

L-NAME produced significant enhancement of contraction over all stimulation frequencies. L-arginine significantly inhibited contraction from 40–100 Hz. D-NAME had no effect on the contractility. The relative enhancement or inhibition of contraction at 40 Hz (f1/2) in the presence of L-NAME and L-arginine were 64.45 ± 48.01% and 29.98% ± 11.81% respectively. When combined with L-arginine, the enhanced effect of L-NAME on EFS induced contraction was reduced (29.76 ± 12.61%).

CONCLUSIONS

NO appears to be a relaxant neurotransmitter within the SV. It is able to directly regulate smooth muscle contractility of the SV. This may explain why sildenafil is effective in treating premature ejaculation.

P076

Growth factors of the FGF family secreted by smooth muscle cells promote proliferation in normal human urothelial cells

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OBJECTIVE

Normal Human Urothelial (NHU) cells maintain a high proliferative rate in culture by producing autocrine growth factors of the EGF family. The objective of this study was to investigate whether smooth muscle (SM) cells are involved in the regeneration of the urothelium.

METHODS

Conditioned medium (CM) was harvested from SM cells in culture. NHU cells were treated with CM, before assessing proliferation. Receptor activation was assessed by inhibition of the EGF and KGF receptors, and cells were analysed for activation of ERK.

RESULTS

SM cell CM was mitogenic to NHU cells. The CM rescued NHU cells from EGFR inhibitor-associated growth arrest, but failed to do so from KGFR inhibition. Analysis of downstream events showed that exposure of NHU cells to SM CM resulted in ERK phosphorylation following antagonism of the EGFR, but not following antibody blocking of KGFR.

CONCLUSION

We have shown that SM cells produce factors that are mitogenic for NHU cells. These factors act via KGFR, but not EGFR, to activate the ERK pathway. We suggest that SM cells influence NHU cell proliferation via paracrine activation of KGFR and that both paracrine and autocrine stimulation of NHU cell growth act through the MAPK pathways.

Wednesday 28 June 14.30–15.30
Clinical Governance
Chairmen: J. Adshead and D. Fawcett

P077

The financial penalty of a 'one stop' diagnostic service

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INTRODUCTION

Our unit has piloted diagnostic clinics (DC) to improve efficiency of investigation and minimise follow up visits. A new DC visit inevitably includes a hidden 'follow up' consultation to review results of patients who are subsequently discharged. Currently this extra activity is not remunerated by Primary Care Trusts.

METHODS

A prospective database of new referrals and outcomes for both standard (SC) and diagnostic clinics (DC) was established. The anticipated re-imbursement for each clinic type under the Payment By Results scheme was then calculated.

RESULTS

Over a 3/12 period 549 new SC and 254 new DC referrals were seen. Additions to the waiting list were similar (27% vs. 24%) indicating comparable groups. There was a 52% reduction in follow-ups in the DC (57.5% vs. 28%). Annually 4400 new patient referrals are seen in our unit. Applying the Health Resource Group (HRG) tariff of £71 for a follow-up consultation, £179 630 would currently be earned from SC follow-ups, however, if all new patients in the future were seen in DC clinics, this would be reduced to £87 472.

CONCLUSION

The current failure to reimburse the hidden 'follow up' activity in a diagnostic clinic (DC) represents a considerable financial penalty to a unit in pursuit of manifestly improved care.

P078

A randomised trial of standard versus BAUS procedure-specific consent forms for transurethral resection of prostate

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INTRODUCTION

Risk documentation on standard consent forms can be incomplete; as such consent may not be 'informed'. BAUS has introduced procedure-specific consent forms outlining the risks of urological procedures. We assessed understanding of risks and benefits of TURP after consenting with standard versus BAUS procedure-specific forms.

MATERIALS AND METHODS

One hundred patients were randomised to consent with either standard or BAUS forms. Three hours later their understanding was assessed by questionnaire asking the indication and likelihood of symptomatic improvement, frequency of complications and the risk of future re-operation.

RESULTS

Fifty patients were randomised to each group. There was no significant difference in age, grade of doctor consenting or time from consent to questionnaire. There was no difference in estimation of risk of incontinence, erectile dysfunction, retrograde ejaculation, or UTI. However, only 30–40% correctly estimated each risk. Patients consented with the BAUS documentation predicted the risk of re-operation at ten years more accurately (median answer 10% vs. 30%, $P = 0.007$, Mann-Whitney test).

CONCLUSIONS

There was no significant difference in estimation of most risks between groups. The BAUS group predicted risk of re-operation at 10 years more accurately. We feel that the provision of a written structured framework allows better informed consent for TURP.

P079

Is the two-week cancer rule working?

S. RAVICHANDRAN, G.K. REDDY, D. O'SULLIVAN, E.P.M. WILLIAMSON and D.G. MACHIN
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INTRODUCTION

The two-week rule requires that patients meeting suspicious cancer criteria be seen within 2 weeks by a hospital specialist. Referrals have doubled since 2002. Many referrals seem inappropriate, based on the guidance provided to the GPs. We checked the appropriateness and compared the 2002 referrals with 2004.

METHODS

Fifty random referrals each from the year 2002 and 2004 were audited and compared against the guidance provided to the GPs.

RESULTS

Frank haematuria and intra-testicular swelling accounts for the majority of referrals. Five per cent of macroscopic haematuria referrals in 2002 and 11% in 2004 did not have frank haematuria. Fifty per cent in 2002 and 43% in 2004 of microscopic haematuria referrals were inappropriate. Testicular swelling is often referred inappropriately; 83% in 2002 and 67% in 2004. None of these had significant pathology. More than half referred with increased PSA or clinically malignant prostate were not compliant with the guidance to the GPs. Overall only 62% of referrals in 2002 and 60% in 2004 were appropriate as per the guidance provided.

CONCLUSION

Forty per cent of the GP referrals under the two-week rule are inappropriate despite the broad referral criteria. Intra-testicular swellings are often referred inappropriately. The guidance to GP's needs urgent review and change.

P080

Local MDT structure determines whether data entry into MDT database can be in real-time during the meeting or afterwards

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INTRODUCTION

A tailor-made, free of charge, Microsoft Access database has been adapted for use in several hospitals. It generates a patient list, proformas for patient discussion, a GP letter, attendance record, statistics summary and a BAUS compatible table.

METHODS

The differences in MDT structure between various hospitals were assessed to ascertain how this database could be used best to support the MDT meeting.

RESULTS

Hospitals discussing fewer than 12 patients in one hour were comfortably able to enter diagnosis and treatment decisions during the meeting. Accurate data entry was best achieved by database projection onto a screen so participating clinicians could verify this data.

This method did not require a clinician to enter the data. Hospitals discussing more than 12 patients benefited most from pre-prepared proformas filled out at the meeting. The MDT co-ordinator would subsequently enter these treatment decisions into the database and print out the GP letters, which were then signed by a clinician.

CONCLUSIONS

A database can be very helpful with running an MDT meeting. However local MDT structure ultimately determines whether a real-time or retrospective data entry should be used.

P081

The effect of government waiting targets in urological oncology (2002–2005). What can we expect for the future?

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INTRODUCTION

The aims of this study are (i) to report changes in treatment times for urological cancers since the introduction of the 2-week wait rule and (ii) to predict the effects of the new 62-day target on department workload.

PATIENTS AND METHODS

Data were obtained from the BAUS Cancer Registry 2002–2004 comprising 80 108 new cancers.

RESULTS

Cases of prostate cancer referred as 2ww waited longer to be treated in 2004 than in 2002. Cases of bladder cancer referred originally as non-urgent waited less time in 2004 than in 2002. Other waits were stable.

TABLE 1: Median time (days) from referral to first definitive treatment

		2002	2003	2004
2ww	Prostate	56	60	70
	Bladder	49	49	48
Non-urgent	Prostate	166	167	161
	Bladder	112	97	92

TABLE 2: The proportion (%) of 2ww cases treated within 62 days

	2002	2003	2004
Prostate	53.5	51.9	44.0
Bladder	62.6	62.7	66.8

CONCLUSION

The increase in times to treatment for 2ww prostate cancer referrals may in many cases be clinically appropriate, however the associated decrease in the proportion of these cases treated within 62 days has huge implications for resource allocation. The apparent improvement in some bladder cancer 'treatment' times may not be an accurate reflection of times to radical therapy.

P082

Two-week rule for microscopic haematuria – is it worth the effort?
A five-year audit

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PATIENTS AND METHODS

A total of 656 patients with microscopic haematuria attended a dedicated clinic under the two-week rule between November 2000 and November 2005. Urine dipstick, culture, cytology, renal ultrasound, KUB X-ray, flexible cystoscopy, electrolytes and PSA (when appropriate) were performed.

RESULTS

The patients' age ranged between 16 and 93 years, 17% (n = 111) aged <50 years. Males and female patients were distributed equally.

Only 2.6% of all the patients were found to have an underlying malignancy –0.9% (n = 6) had renal cancer 1.7% (n = 11) had bladder TCC. Only one of these patients was aged <50 years.

Urine cytology was positive in four of the 11 patients with bladder TCC. It showed atypical cells in a further 6% (n = 40) of patients, which required further evaluation. None of these subsequently were found to have an underlying malignancy.

Ultrasound detected non-malignant pathology in 7% (n = 47) of patients, the commonest being renal calculi (n = 20). Ultrasound also detected 11 patients with de novo abdominal aortic aneurysms over 5 cm in diameter.

CONCLUSION

Fast track referral for microscopic haematuria is not justified, as the number malignancies are so small. Serious consideration needs to be given as to whether those aged less than 50 years need referral at all.

P083

Is there a minimum caseload for cystectomy? Results from a regional review

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Lancashire Teaching Hospitals NHS Trust, Preston, UK

INTRODUCTION

The minimum caseload for cystectomies has recently been calculated as 11 by McCabe et al (BJUI 2005: 96; 806–810) using national HES data and a mortality rate of 5.4%.

PATIENTS AND METHODS

All cystectomies in 2003 from 15 hospitals were identified retrospectively.

RESULTS

The mean number of cases per hospital was 10.5 (range 2–30) and per consultant 1–23 cases. Two or more consultants operated together in 35% of procedures. Median length of stay was 16 days, 55% received $\geqslant$2 units of blood and the 30-day mortality rate was 1.3%.

CONCLUSIONS

This data suggests that in 2003 the Improving Outcomes Guidance of a minimum five cases per consultant was not being followed in this region, however the practice of joint operating by consultants may account for surgeons with low numbers still operating and will not be recorded within normal hospital statistics. McCabe's conclusion that 11 cases/annum/hospital should be the cut off for case volume with respect to mortality is questioned by this analysis, with a mortality rate of 1.3% and only 6/15 hospitals reaching McCabe's threshold.

P084

Involving doctors in clinical coding makes financial sense

C.W.M. CUTTING, Y. SMITH, F. LEE and K.M. ANSON
St. George's Hospital, London, UK

INTRODUCTION

The introduction of the payment by results system and National Tariffs has made the accuracy of clinical coding vital for hospital Trusts. We set out to identify if the involvement of doctors would improve the accuracy of clinical coding.

METHODS

One week of discharges from the urology department were coded using the standard hospital coding system. These same discharges were re-analysed with the input of two urology doctors and the hospital coding coordinator. The differences in coding and differences in health resource group (HRG) and National Tariff payments were then assessed.

RESULTS

Seventy-five patient episodes were studied; 40-day cases, 21 elective in-patients and 14 emergency admissions. Of these 75, 31 episodes had the coding altered, leading to a change in the HRG in 23 cases. Using National Tariffs, the Trust calculated income was £67 217. With the medical re-coding, the expected payment would have been £72 927. This is a difference of £5710 (or 8.5%) for 1 week, equating to £296 920 for 1 year.

CONCLUSIONS

Accuracy of clinical coding is critical to ensure appropriate payment to hospital trusts for work undertaken. Involvement of doctors in the coding process is recommended to ensure accurate coding and optimisation of income generation.

P085

Non-attendance in outpatients: causes and remedies?

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Homerton University Hospital, London, UK

INTRODUCTION

Out-patient non-attenders cost the NHS approximately £360 million annually. In today's climate of meeting targets this puts added pressure in rescheduling these appointments. We investigated the reasons for and possible measures to decrease DNA ('did not attend') rates.

METHODS

We conducted a prospective audit over 3 months for all consecutive urology outpatients. Non-attenders were interviewed by telephone within 48 hours.

RESULTS

Two hundred and eleven of 347 DNA patients (61%) were contacted, the contact details of the remainder having changed. Common reasons for DNA were failure to receive the appointment letter (57%) and forgetting the appointment date (22%). Most patients would have liked a reminder of their appointment. Not all patients were aware they had been referred to the hospital. Interestingly, DNA rates were lower for certain specialist clinics.

DISCUSSION

According to our survey, patients welcomed the idea of reminders by telephone, email or texts, the latter being the most preferred and economical method. Additional improvements such as GPs/casualty staff ensuring patients are made aware of their referrals, reduction in waiting times from referral to appointments, allaying patient anxiety by means of helpful written information and regular updating of patient demographics, would further reduce DNA rates.

P086

Commissioning of prostate cancer follow-up in primary and secondary care

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INTRODUCTION

Changes in healthcare commissioning for chronic conditions means novel methods are required for appropriate management of suspected or diagnosed prostate cancer. Collaboration with the PCT and Hospital Trust has enabled follow-up of most patients by their usual GP with rapid access to secondary care when required.

METHODS

Patients and GPs were invited to enter the scheme with the majority followed up by GPs with rapid access to secondary care. Each GP received £96 per active patient per year from the PCT. Specific management algorithms were developed by Consultants and reviewed at the MDM for defined patient groups. The Exeter recall system ensured follow up and payment.

RESULTS

After 1 year 642 patients have been registered with 438(68%) actively managed by their GP. 56(9%) require consultant follow up only and 110 (17%) refused enrolment. 26 (4%) have been deferred from the GP to secondary care. 12 (2%) have died, moved or failed to reply.

CONCLUSION

The majority of patients and GPs accepted the scheme with a significant reduction in unnecessary hospital visits and no patients lost to follow up. Rapid access to specialist care was provided when needed with overall care of prostate cancer overseen by Consultant Urologists and the multidisciplinary team.

Wednesday 28 June 16.00–17.00 Andrology: Infertility and Penile Cancer Chairmen: P. Powell and N. Watkin

P087

A multi-centre, double-blind, randomised, placebo-controlled, parallel-group study to determine the efficacy and safety of PSD502 in patients with premature ejaculation (PE)

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INTRODUCTION

PSD502 is a metered-dose aerosol spray for use in PE; each actuation provides 7.5 mg lidocaine and 2.5 mg prilocaine in a eutectic combination. The aim of this study was to evaluate PSD502 in patients with PE.

MATERIALS AND METHODS

Men with PE (defined via DSM-IV criteria) aged between 18–75 years were enrolled. Patients were randomised to self-apply three sprays of PSD502 or placebo prior to sexual intercourse on four consecutive occasions. The primary endpoint was the mean change in IELT from baseline. IELT was recorded using a stopwatch.

RESULTS

Fifty-five per cent of PSD502-treated patients and 35% of placebo-treated patients had an IELT ≥2 minutes (i.e. normal

	Baseline IELT	Post-treatment IELT	Change from baseline[+]
Placebo (n = 23)	0.9	1.6	0.9
PSD502 (n = 20)	1.0	4.9	3.7*

[+]Adjusted for baseline.
*$P < 0.01$.

duration of sexual intercourse) on at least two occasions post-treatment.

Local numbness occurred in 3 (11.5%) PSD502-treated patients. There were no discontinuations due to this.

CONCLUSION

PSD502 produced a statistically and clinically significant increase in IELT compared with placebo. PSD502 was well-tolerated and devoid of systemic side-effects associated with oral administration.

P088

Vasectomy reversal: Is the microscope really essential?

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OBJECTIVE

To evaluate the outcomes of vasectomy reversal procedure in relation to the macroscopic technique, surgical time and duration of obstructive interval.

MATERIALS AND METHODS

We performed a retrospective study over a 12-year period from 1992–2004, using a macroscopic technique. All cases of vasectomy reversal were consecutive and performed by the same surgeon. The procedure was performed using a single layer, spatulate end to end anastomosis technique using 6-0 prolene.

RESULTS

The median age of the men was 42 and ranged between 30 and 56. The obstructive interval in years ranged between 2 and 23 with a median of 8.5 years. The median surgical time under general anaesthetic was 75 minutes. A total of 56 of the 63 patients had positive patency test postoperatively (89 %) with the sperm count of more than 20 million/ml. The pregnancy rate was 54%.

Parameters	Results
Number of subjects	63
Median age in years	42 (30–56)
Median obstructive interval in years	8.5 (2–23)
Median operative time in minutes	75 (45–90)
Operative Procedure	Day case
Positive patency rate in percentage	89%
Sperm count in million/ml	>20 m/ml
Positive pregnancy rate in percentage	54%

CONCLUSION

The outcomes of macroscopic vasectomy reversal performed by an experienced surgeon have a high success rate using the macroscopic single layer end to end spatulate anastomosis technique. This technique is easy to learn compared to the learning curve involved in microsurgery and is an effective means of 're-establishing' fertility in vasectomised men.

P089

Factors predicting a successful vasectomy reversal

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INTRODUCTION

Patients need to know the prognosis of a reversal of vasectomy to determine whether assisted conception would give a better outcome. This study assesses the factors that are likely to result in a successful operation.

METHODS

A microsurgical reversal of vasectomy was performed by a single surgeon in 148 patients (mean age 42 years). Prospective data was collected on the type of operation performed, the vasectomy interval, site of the anastamosis and quality of the vasal fluid (Table).

RESULTS

The mean vasectomy interval was 9.2 years and overall sperm returned to the ejaculate in 80% of patients. The operations performed were vasovasostomy (n = 119; patency 82%), redovasovasostomy (n = 21; patency 75%) and epididimovasostomy (n = 8; patency 71%).

	Parameters	Patency rate
Vasectomy interval (years)	⩽3	92%
	4–8	89%
	9–14	71%
	>15	71%
Quality of sperm at operation	Milky both sides	91%
	Milky one side	83%
	Thick/green/dry	66%*
Site of anastamosis	Straight vas both sides	93%
	Straight vas one side	79%
	Convoluted vas both sides	68%*

*P<0.05

CONCLUSION

A short vasectomy interval, a palpable gap in the straight vas when examined and a first time operation should guide patients into choosing a vasectomy reversal as the treatment of choice.

P090

Vasovasostomy – A simpler way!

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INTRODUCTION AND OBJECTIVES

Reversal of vasectomy can be performed with a loupe or an operating microscope. We aim to present the outcomes of loupe-assisted technique with a removable stent.

METHODS

Thirty patients underwent a loupe-assisted vasovasostomy operation in the last 4 years. Under general anaesthetic, 2X loupe-assisted single layer bilateral vasovasostomy was performed, with 6/0 prolene sutures and a removable 2/0 nylon stent (removed in 4 days) and semen analyses were performed after 2 months.

RESULTS

Thirty patients aged 31–50 years [mean (SD) – 39.3 (4.7) years] with post vasectomy duration of one to twenty years [mean (SD) – 7.62 (4.65) years] underwent the above procedure. The operating time was 60–81 minutes [mean (SD) – 71.8 (7.8) min]. No complications were recorded in this series. Semen analyses were available from 25 patients; 23/25 (92%) showed the presence of sperms [concentration (million/ml) – 21.5, motility (%) – 22.8, normal forms (%) 10.6]. Six patients had obstructive interval of ≥10 years and their analyses showed lower sperm concentration and motility [concentration (million/ml) – 3, motility (%) – 16.8, normal forms (%) – 5.5].

CONCLUSIONS

This simple technique gives high patency rates with less operating time.

P091

An algorithm incorporating repeated vibro-ejaculation to improve fertility in spinal cord injured (SCI) men

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INTRODUCTION

Ejaculatory dysfunction and poor sperm quality are main reasons for infertility in SCI. Sperm quality is significantly improved using repeated vibroejaculation (Hamid et al. Spinal Cord 2005).

AIM

Our aim was to develop an algorithm incorporating repeated vibroejaculations for improvement of fertility in SCI men.

PATIENTS AND METHODS

Seventy-four patients with spinal cord injury were tested by vibroejaculation using a standardised technique. The ejaculate was examined according to WHO protocol. The study group vibroejaculated weekly for

3 months with semen analysis performed at baseline and then monthly. Control group vibroejaculated at baseline and at the end of the 3-months. All measures were compared for statistical significance across the two groups at beginning and at the end of 3-month period.

RESULTS

Morphology and forward progression of sperm show a statistically significant increase in the study group. Motility improved in the study group but was not statistically significant. Two men from study group got positive fertility result using natural intravaginal insemination technique.

CONCLUSION

Based on this prospective randomised controlled study we propose an algorithm in which SCI men with poor sperm quality undergo repeated vibroejaculation for 3 months before trying intravaginal insemination. This method promotes natural conception, maintains intimacy and is cost effective.

P092

Percutenous needle aspiration or open testicular sperm extraction for sperm retrieval in azoospermic patients? Does histology affect outcome? Do we need open biopsy for histopathologic diagnosis?

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INTRODUCTION

To investigate the efficiency of percutaneous needle sperm aspiration (PTSA) compared with open testicular sperm extraction (TESE) for histopathologic diagnosis and sperm retrieval in azoospermic patients and does testicular histology affect the outcome?

PATIENTS AND METHODS

A total of 490 azoospermic patients 84 obstructive (OA) and 406 non-obstructive (NOA) who underwent and attempted testicular sperm retrieval are included in this retrospective study. The NOA group included 137 hypospermatogeneses (HPS), 89 maturation arrest (MA), 75 tubular sclerosis (TS), and 105 sertoli cell only (SCO). PTSA using 18G butterfly needle was attempted first and if failed open TESE was performed.

RESULTS

In OA, sperms were retrieved in all patients, 98% by PTSA, while in the NOA sperms were retrieved in only 52% of patients, 83% by PTSA and 17% by TESE. In the NOA sub-groups where sperms were recovered, PTSA was successful in 94, 75, 70 & 57% of HPS, MA, TS and SCO respectively. PTSA histopathologic diagnosis correlated very well with open biopsy.

CONCLUSION

PTSA using 18G needle is effective in histopathologic diagnosis and sperm retrieval, its sperm retrieval results correlated very well with testicular histopathology and is recommend to be used first, keeping the open TESE for the failed cases.

P093

Surgical sperm retrieval rates for assisted conception in men with primary and secondary azoospermia

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INTRODUCTION

Men presenting with primary and secondary azoospermia may be offered surgical sperm retrieval (SSR) as a prelude to ICSI. We evaluated sperm retrieval rates in men with clinical obstructive azoospermia (OA) and non-obstructive azoospermia (NOA) with both normal and abnormal testicular volumes and serum FSH.

PATIENTS AND METHODS

Two hundred and seventy men with azoospermia underwent clinical, and biochemical, evaluation and SSR with PESA and/or TeSE by a single urologist. One hundred and sixty-four had azoospermia post vasectomy (group A) and 106 had primary infertility, 11 with clinical obstruction (group B) and 95 clinically not obstructed (group C). The suitability of retrieved sperm for ISCI was assessed by one embryologist.

RESULTS

Two hundred and nineteen men (81%) had adequate sperm retrieved, 95% in group A, 100% in group B, and 56% in group C respectively. Twenty-one men in group C had testes <4 cm and FSH >10; they had a significantly lower sperm retrieval rate (29%) compared to men with NOA and normal testicular volume and FSH (73%, $P = 0.0012$).

CONCLUSION

Men with OA or NOA, with normal sized testes and normal FSH, can expect acceptable sperm retrieval for ICSI. Less than one third of men with NOA and raised FSH, or small testes, will, however, have successful sperm retrieval.

P094

Conservative organ preserving surgery for carcinoma of the penis – a safe option

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INTRODUCTION

Primary lesions of penile carcinoma treated by radical amputation leave the patient with significant functional problems without survival advantage. We have reviewed the outcome of their conservative management.

MATERIAL AND METHODS

Over 3 years, 35 penile cancers were treated. Mean age: 70.9 years. Seventeen had pT2 lesions, 16 had pT1, 2 pT3. 12 had grade 3 lesions, 15 grade 2, eight grade 1. Twenty-eight (80%) had conservative surgery. Mean follow up: 20.7 months. A positive margin was defined as a tumour clearance of less than 1 mm.

RESULTS

Fifteen of the 28 had pT1, 12 pT2 and 1 pT3 disease. Two had positive margins (7.1%), three developed local recurrence (10.7%) – 1 with pT1 disease (6.7%), three with pT2 (25%), one with pT3 (100%). 4/5 were grade 3. One patient with pT3G3 and two with pT2G3 had local recurrence; other two with pT1/T2 did not. All underwent further excision. No significant local complications were observed.

CONCLUSIONS

Organ preserving surgery for penile cancer with an excision margin of 1 mm is a feasible and safe option for most patients with T1 and T2 disease. Positive margins with T3 disease raise the risk of local recurrence unlike T1/T2 where recurrence is unlikely.

P095

Dynamic sentinel lymph node biopsy for penile squamous cell carcinoma: initial experience from a UK centre

P. HADWAY, C.M. CORBISHLEY, S. HEENAN, M.J. PERRY and N.A. WATKIN
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INTRODUCTION

Nodal metastasis is the single most important prognostic factor in patients with penile cancer. Patients with clinically negative groins have approximately a 20% chance of harbouring metastases. We describe our experience of sentinel lymph node (SLN) biopsy as a staging tool in patients with impalpable groins.

METHODS

Forty-two patients with stage ≥T1 grade 2 tumours with impalpable groins were recruited. Patients underwent ultrasonography ± fine needle aspiration cytology (FNAC). Lymphoscintigraphy with intradermal injection of technetium nanocolloid around the tumour was performed prior to surgery. Following anaesthesia, methylene blue was also injected. The SLN was identified intra-operatively using a gamma probe. Lymphadenectomy was restricted to patients with positive SLN. All nodes were subjected to immunohistochemical staining.

RESULTS

Seventeen of 84 groins (20%) were found to have nodes harbouring micrometastases. All patients with positive nodes underwent lymphadenectomy. In only one case were further positive nodes found. 6 of 17 groins had a positive FNAC. To date there have been no false-negative results.

CONCLUSIONS

Early experience has been encouraging. The SLN can be quickly identified and excised through a small incision. The initial findings suggest the technique will reduce the morbidity from unnecessary surgery and improve early detection of occult micrometastases.

P096

Outcome of 100 prospective cases of penile cancer stratified according to the European Association of Urology (EAU) guidelines

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INTRODUCTION

To examine the success of the EAU guidelines in achieving regional control and to study the prognostic value of the current TNM system in predicting nodal disease and mortality.

METHODS

Between 2002 and 2005, 100 consecutive cases of penile cancer were prospectively analysed. The EAU guidelines were strictly applied in all cases. Follow-up was up to 42 months.

RESULTS

In total, lymph node dissection was recommended in 60 cases. Of the men with palpable lymph nodes, 72% had positive lymph nodes, whereas those with impalpable nodes undergoing prophylactic dissection, 19% had positive nodes. The 3-year survival rate was 93% for the whole group. The survival for grades 1, 2 and 3 were 100%, 90% and 89% respectively. For T stages 1, 2 and 3, the 3-year survival rates were 97%, 81% and 100% respectively. The 3-year survival rate was 100% for node negative disease but 59% for node positive disease.

CONCLUSION

The stage of the primary is poorly predictive of nodal status or disease-specific survival. Tumour grade and lymph node involvement are prognostic factors for survival. The EAU guidelines appear to be effective in preventing disease progression, although at the cost of overtreating a large number of cases.

Thursday 29 June 09.30–10.30
BPH
Chairmen: M. Emberton and M. Speakman

P097

Self-management for men with uncomplicated LUTS: a randomised controlled trial.

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INTRODUCTION

Standard care for men with LUTS includes watchful waiting, medication and surgery. Lifestyle and behavioural (self-management) interventions are sometimes advised but their effectiveness has never been formally evaluated. We have developed a formal self-management programme and assess its effectiveness. Our objective is to determine whether self-management, in addition to standard care, is more effective than standard care alone.

MATERIAL AND METHODS

One hundred and forty men with uncomplicated LUTS were randomised to self-management and standard care, versus standard care alone. Those randomised to self-management attended a programme detailed in Eur Urol, 2004; 46 (2): 254–263.

RESULTS

At 12 months, patients in the self-management and standard care group compared to patients in the standard care alone group had: (1) Less severe symptoms, (difference in IPSS of 5.1, 95% CI [2.7 to 7.6], $p<0.001$); (2) Increased QoL (difference in BPH Impact Index of 1.2, 95% CI [0.1 to 2.4], $p=0.004$, and difference in AUA-QoL of 0.5, 95% CI [0.1 to 1.1], $p=0.03$); (3) Lower

rates of treatment failure (48% difference, 95% CI [32% to 64%], p<0.001). Treatment failure was defined as a rise in IPSS of 3 points or more, the use of medical or surgical therapy for symptom control and acute urinary retention.

CONCLUSIONS

Participation in a self-management programme may result in men experiencing fewer symptoms, improved quality of life, and a reduction in the need for medical therapy.

P098

The implications of the BAUS guidelines for the management of men with LUTS suggestive of BPH

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INTRODUCTION

BAUS has recently published guidelines (BG) for the management of men with LUTS suggestive of BPH. We sought to assess the effects upon prescribing and disease progression within a real-life cohort of patients.

METHODS

Using a prospectively collected database of BPH patients, we evaluated the risk factors (RF) for disease progression at presentation and the initial medical therapy prescribed. We then estimated prescribing if the BG were applied and, based on data from MTOPS, the possible reduction in BPH progression events.

RESULTS

471 of the 641 patients within the database presented with LUTS. Of these, 60% presented with a PSA > 1.4 ng/ml, 67% with an IPSS > 7, and 53% with a Qmax < 12 ml/s. 95% had at least one RF for progression as defined in the BG. Applying the BG would lead to a 57% and 16% increase in the prescribing of 5-alpha-reductase inhibitors and alpha-blockers respectively. Over 4 years in 471 patients, this may prevent only 21 progression events (nine episodes of ≥4 point increase in IPSS, 3 episodes of AUR, and nine episodes of surgery).

CONCLUSION

The BG will greatly increase prescribing for BPH. A formal cost-effectiveness analysis is required to establish whether the observed benefits will prove cost-effective to healthcare providers.

P099

We ask the Greenlight laser: are you really worth it?

E. SANS-SOLACHI, R. JAIDKER, R. SHAH, N. PATHMANATHAN, W. CHOI and N. SHROTRI
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AIM

Growing demand for inpatient beds within the NHS renders treatments with reduced hospital stay an attractive option. Photovaporization of the prostate using the 80 W Greenlight laser, offers efficacy and a further advantage of minimal hospital stay. We report the 'health economics' aspects and address the issue of cost savings in providing this service at a DGH.

MATERIALS AND METHODS

One hundred and eighty patients had Greenlight laser prostatectomy carried out. Patients had Day Case surgery if feasible. 20 patients were high risk and 30 patients had glands larger than 50 cc. The cost of the Laser and instruments was a major investment. The single-use fibre cost £450. In comparison a TURP averagely cost the hospital £1200 in terms of inpatient stay.

RESULTS

The average length of stay was 0.7 days, compared to a 2.8 day stay for a TURP. There was a cost saving of £750 – £1,000 per patient. 10% of patients had dysuria or haematuria within the first month and 2 had Bladder neck stenosis requiring reoperation. One patient had incontinence.

CONCLUSION

Great savings are to be made when laser prostatectomy is offered to patients for their lower urinary symptoms. Installation costs can be easily recovered within one year.

P100

Open prostatectomy – is it going to be a text book operation as huge prostates >100 ml can be treated with Greenlight PVP!

R. KRISHNAMOORTHY, N.J. BARBER, K. WALSH, P.M. THOMPSON and G.H. MUIR
Kings College Hospital, London, UK

INTRODUCTION

High-power 80 W KTP laser systems have already shown promise in the surgical management of BPH. We report our experience in treating patients with huge prostates using this modality.

METHODS

Seventy one patients with prostate volumes in excess of 100 ml (100–300) have been treated to date in our institution. 21 were in urinary retention, 11 were deemed unsuitable for open prostatectomy due to co-morbidity. Four patients were on warfarin, preoperatively converted to shorter acting agents.

RESULTS

53/71 patients were treated on a day-case basis (2–8 h postoperative stay), 12 patients had an overnight stay (15–26 h) due to social reasons and six prolonged stay due to medical reasons (36–168 h). There were no cases of TUR syndrome. At 6 months, significant improvements in terms of mean IPSS score (18.2–8), quality of life score (4.6–2.1), and maximum flow rate (12.5–17.5 ml/s) are evident. Mean reduction in prostate volume is 42.4 % (19–64%) on TRUS.

CONCLUSION

The data above represents our 'learning curve' with this technique. The GreenLight system allows even huge prostates to be managed in a day care setting showing significant clinical improvements with significant prostate volume reduction and an impressive safety profile.

P101

Can PSA predict blood loss and fluid absorption during TURP?

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INTRODUCTION

Stamey suggested that PSA correlate best with BPH. Blood loss and fluid absorption during TURP can cause significant morbidity. We looked at the use of pre-operative PSA (compared with per-operative factors) in predicting blood loss and fluid absorption during TURP in BPH patients.

PATIENTS AND METHODS

Seventy five men undergoing TURP were studied. PSA and volume were measured. Blood loss was calculated using a Haemocue photometer. Fluid absorption was measured using continuous on-table weighing. Receiver operating characteristic curve analysis (ROC) was used to predict blood loss over 500 ml and fluid absorption over 1 litre.

RESULTS

Mean age was 67, PSA 4.1, prostate volume 44 ml, resection time 29 min, resected specimen weight 20 g, blood loss 257 ml, and fluid absorption 352 ml. PSA > 5.0 ng/l predicted absorption >1 l (sensitivity 83%, specificity 78%) with ROC curve area 0.88 ($P = 0.003$). The same value predicted blood loss >500 ml (sensitivity 75%, specificity 78%) with ROC curve area 0.86 ($P = 0.001$). Resection weight produced the most positive ROC for blood loss (0.95, $P = 0.000$).

CONCLUSION

A PSA over 5 ng/l strongly predicts the likelihood of increased fluid absorption and predicts significant blood loss during TURP in BPH. It is a better indicator than most per-operative indices in BPH.

P102

Wardill's test – a useful predictor of voiding flow following removal of urinary catheter

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Department of Urology, Leighton Hospital, Crewe, UK

INTRODUCTION

Wardill's test is used to predict voiding flow following trial without urinary catheter (TWOC) in patients who have undergone TURP. We performed a retrospective analysis of the accuracy of Wardill's test in predicting successful TWOC.

PATIENTS AND METHODS

One hundred and twelve patients who had undergone TURP were included in this study. Patients were scored (W0–W3) using the Wardill's test following their TURP. Excellent free urinary flow on removing resectoscope was W3 with poor urinary flow even with suprapubic pressure rating W1. Successful TWOC was considered the end point of the study.

RESULTS

Mean age was 71 years. There was no significant difference between groups in age, PSA, prostate volume, indwelling catheter, resected prostate tissue, histological diagnosis and grade of surgeon. 15 men had prostate cancer diagnosed on TURP. Patients with higher Wardill's score had a significantly higher successful TWOC rate in both groups of surgeons ($P = 0.007$).

CONCLUSION

A low Wardill's score indicates the necessity for immediate re-cystoscopy and bladder washout to remove retained resected prostatic chips or further prostatic resection. Wardill's test can be used to predict successful TWOC following prostatic resection and is therefore a useful per-operative guide to the completeness of resection, particularly for the trainee Urologist.

P103

Has the decline in surgical treatment for benign prostatic hyperplasia resulted in an increase in the incidence of acute urinary retention?

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INTRODUCTION

We determine to what extent the shift away from prostatectomy has influenced the incidence of acute urinary retention in England.

METHODS

Data were extracted from the HES database of the Department of Health. Men were included if an ICD-10 code for AUR was present in any of the diagnosis fields of the database. AUR was considered a first-episode if there was no previous record documenting AUR. AUR was classified as spontaneous if the primary diagnosis was AUR or the primary diagnosis was BPH with a secondary diagnosis of AUR. 165 527 men were identified to have experienced AUR over the study period.

RESULTS

The overall incidence of AUR was 3.06 per 1000 men per year. AUR was spontaneous in 65.3% of cases. Incidence of AUR fell from 3.17 per 1000 men per year in 1998 to 2.96 in 2003. Incidence of AUR increased exponentially with age from 0.49 per 1000 men per year in those aged between 45 and 54 to 16.80 per 1000 men per year in those aged over 85.

CONCLUSIONS

The slight fall in incidence of AUR suggests that the shift away from surgical treatment for BPH has not resulted in an increase in the occurrence AUR.

P104

Model of prediction: management outcome of acute urinary retention

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OBJECTIVES

To assess for predictors of outcome in patients presenting with acute urinary retention.

METHODS

A prospective study was performed to evaluate trial without catheter (TWOC) and successive management. Predictors of surgical or medical management were assessed. These included: age, residual volume drained at time of catherisation, cause of retention, creatinine, success of TWOC, co-morbidities, PSA, and prostate size on digital rectal examination (DRE).

RESULTS

Seventy two men entered into the study over an 18 month period. 27 had successful first TWOC. 20 patients had a second TWOC and six were successful. 31 of the 33 patients with a successful TWOC remained on an -blocker without a further episode of AUR with a minimum of 6 months follow up. Patients failing TWOC were managed by TURP (22), long-term catheterisation (15) or prostatic stents (3). One patient died before intervention. Three predictors were significant on multivariate analysis: PSA (>2.9 ng/ml); prostate size on DRE (large); and residual volume drained at catherisation (≥1000 ml).

CONCLUSION

Patients with elevated PSA (>2.9 ng/ml), prostate size on DRE (large) and a residual volume >1000 ml are best managed by surgical intervention, while those with the residual volumes <1000 ml, a PSA <2.9 ng/ml, and moderate to small prostates may be managed medically.

P105

What proportion of patients in urinary retention (UR) can be safely discharged from A&E immediately?

P.H. ROUSE, J.S.A. GREEN, K. LOWERY and R. POPAT
Whipps Cross University Hospital, London, UK

INTRODUCTION

It has been surmised that patients presenting in UR be catheterised and those with favourable parameters could be discharged from A&E with subsequent definitive management later. We therefore set out to assess the potential for managing patients in our hospital in this manner.

PATIENTS AND METHODS

All adult males admitted with a diagnosis of UR over a one year period were reviewed. Parameters noted included: residual volume, creatinine, white cell count and urine culture. Patients with normal results were further assessed as to whether their general health and social circumstances would allow immediate discharge.

RESULTS

Two hundred and five were admitted with a diagnosis of UR, 69 had residual volume >1000 ml, 102 had abnormal serum creatinine, 69 had abnormal WCC and 34 had positive urine culture. Overall 170 had at least one abnormal parameter. Of the remaining 35 men, eight presented with clot retention, six had accompanying major medical conditions, three were post urological surgery and three had poor social support.

CONCLUSION

Only 15 out of 205 (7%) patients presenting with UR were possible candidates for discharge from A&E. Thus 93% of men in UR were ineligible for immediate discharge making the adoption of such a service inadvisable for our population.

P106

Does intraprostatic inflammation have a role in the pathogenesis and progression of BPH?

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Wexham Park Hospital, Slough, UK

INTRODUCTION

A role for intraprostatic inflammation in the pathogenesis and progression of BPH has been suggested. Urinary retention is an end point in this disease. We compared the incidence of acute and/or chronic prostatitis in men undergoing TURP for urinary retention and LUTS.

PATIENTS AND METHODS

A list of TURPs performed over 3 years was obtained from the theatre database. Patients were divided into two diagnostic groups: urinary retention and LUTS. Clinical data were reviewed.

RESULT

Four hundred and six patients were identified, 88 with retention (22%) and 318 with LUTS. The retention group had a mean preoperative PSA of 15.9 μg/l compared to 4.6 in the LUTS group.

Sixty-nine per cent of men with urinary retention had acute or chronic prostatitis compared to 43% of those with LUTS ($P < 0.001$). The incidence of chronic prostatitis alone in the retention group was 35% compared to 21% in the LUTS group ($P < 0.002$). The presence of urethritis was considered to represent inflammation secondary to an indwelling catheter and ignored.

CONCLUSION

Inflammation may have a role in the pathogenesis of BPH. The incidence of inflammation in men with retention was significantly greater than those with LUTS. This finding may offer new avenues for the medical treatment of BPH.

Thursday 29 June 11.00–12.00
Prostate Cancer Treatment
Chairmen: D. Chadwick and S. Prescott

P107

Radical prostatectomy practice in England: HES analysis

V. HANCHANALE, J.E. McCABE and P. JAVLE
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INTRODUCTION

Widespread PSA testing and early diagnosis has increased the number of radical prostatectomies (RP). There is paucity of data on RP trends in England. Furthermore the caseload-clinical outcome relationship for RP in England remains unexplained.

MATERIALS AND METHODS

Hospital episode statistics was extracted for patients undergoing RP over 6 years (1998–2004). National trends in RP practice and volume-outcome relationship was evaluated.

RESULTS

8748 RPs were performed by 478 surgeons at 177 centres. There was no significant difference in mean age throughout study period. Annual number of RPs exponentially increased from 689 (1998) to 2218 (2003). Mean time from diagnosis to surgery increased by 7 days ($P < 0.001$). Length of stay decreased from 9.3 days to 7.1 days ($P < 0.001$). The annual number of laparoscopic RP increased from 4 to 118 over study period. Overall mortality remained low at 0.21%. An inverse correlation was found between the case-volume and clinical outcome measures.

CONCLUSION

There was 26% increase in the annual number of RP per year. This study reaffirms the volume-outcome relationship for RP in England. Some units showed increasing trend towards laparoscopic radical prostatectomy.

P108

Impact of case volume and age on outcome measures in radical prostatectomy

V. HANCHANALE, A. AL-SARIRA, G. DAVID, J.E. McCABE and P. JAVLE
Leighton Hospital, Crewe, UK

INTRODUCTION

With wide array of new treatment options for prostate cancer, radical prostatectomy (RP) can only remain a preferred treatment modality if is associated with low morbidity, mortality rate (MR) with short inpatient stay. We assessed the impact of case volume and age on clinical outcome measures in patients undergoing RP.

MATERIALS AND METHODS

Dataset relating to RP over a 6 year period (1998–2003) were extracted from hospital episode statistics. Urology centres were classified into three case-volume groups (<10, 10–19, 20) according to annual number of RPs performed and clinical outcomes [inpatient mortality and length of stay (LOS)]. Similar analysis was performed in different age groups.

RESULTS

8,748 RPs were performed at 177 centres. Overall MR remained low (0.21%) with over 75% deaths occurring in patients >65 years age. Although there was no significant difference in MR in 3 case-volume groups, LOS (days) was inversely proportional to case load (<10:9.5; 10–19:8.3; 20:7.6; $P < 0.05$). Similarly, older patients (>70 years) had longer LOS compared to younger patients (8.7 vs. 6.7, $P < 0.05$).

CONCLUSIONS

The HES data analysis for RP is indicative of better measurable clinical outcomes in high volume centres. Furthermore older patients have higher MR and longer LOS.

P109

How continence returns after radical retropubic prostatectomy: a prospective questionnaire based analysis

A. JAIN, D. TYSON and R. PURI
Bradford Teaching Hospitals NHS Trust, Bradford Royal Infirmary, Bradford, UK

INTRODUCTION

We aim to analyse the pattern of return to continence after radical retropubic prostatectomy (RRP) by serial analysis of the self-administered International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF).

PATIENTS AND METHODS

Since December 2001 all patients undergoing RRP at our institution are being sent 21-point ICIQ-SF and 18-point Quality of Life Impact (QOLI) questionnaires preoperatively and at 1, 2, 3, 4, 5, 6, 9 and 12 months post-operatively. Return of continence after RRP and its causal association was evaluated by serial analysis of these scores.

RESULT

Among 81 patients with 6–12 months follow up, percentage of patients with ICIQ and QOLI score 3 or less (minimal incontinence and bother) preoperatively and 1, 3, 6 and 12 months post-operatively were 79% & 88%, 18.5% & 44.4%, 25.9% & 71.6%, 50% & 85% and 67.7% & 96.7% respectively. Although percentage of patients with significant incontinence (ICIQ score >6) increased from 6.5% preoperatively to 11% one year postoperatively, QOLI scores improved significantly reaching <6 in all ($P = 0.04$).) High preoperative IPSS score significantly predicted incontinence in early post-operative period ($P = 0.001$) but not at 12 months.

CONCLUSION

Continence continues to improve gradually up to 1 year after RRP. Minimal deterioration persists in 14% patients without affecting their quality of life.

P110

Is radical prostatectomy Gleason score a better predictor of biochemical recurrence than pre-operative TRUS biopsy Gleason score?

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AIM

To assess whether Gleason score on radical prostatectomy (RP) is a better predictor for biochemical recurrence (BCR) than TRUS biopsy Gleason.

METHOD

Two hundred and sixty one patients underwent RP by one of two surgeons with all pathology reported by one of two uropathologists. Patients were divided into groups according to Gleason score ($\leqslant 6$ and $\geqslant 7$ on both TRUS biopsy and RP specimen). Biochemical recurrence was defined as any PSA > 0.2 ng/ml after RP.

	TRUS biopsy	RP
Patients with Gleason score $\leqslant 6$	202 (77%)	178 (68%)
Patients with Gleason score $\geqslant 7$	59 (23%)	83 (32%)

RESULTS

The median age was 62 years (range 44–73) and median follow up was 22 months (range 3–103 months). A significant difference in BCR was demonstrated between patients with Gleason score of $\leqslant 6$ and $\geqslant 7$ on TRUS biopsy (Log rank $P = 0.03$; Cox's proportional hazard regression (CPHR) $P = 0.05$). However, the RP Gleason score was a more significant predictor of biochemical recurrence than the TRUS Gleason score (Log rank $P = 0.01$ and CPHR $P = 0.01$). Hazard ratios were 1:2.29 vs. 1:1.37 in RP and TRUS groups respectively.

CONCLUSION

Gleason score from RP specimen is a better predictor of BCR than TRUS biopsy following surgery.

P111

Radical retropubic and radical perineal prostatectomy: results from a single institution

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INTRODUCTION

The radical retropubic (RR) and the radical perineal (RP) routes are standard surgical approaches for the treatment of localised prostate cancer. There have been scant direct comparative studies to date. This study aims to compare the short and medium term results from a single institution.

PATIENTS AND METHODS

One hundred and forty six patients undergoing radical prostatectomy between 1993 and 2004 were reviewed to date. 90 patients had RR and 56 patients had RP. The median age, TRUS volume, pre-op PSA, Gleason score, blood loss, margins, hospital stay, incontinence, and PSA rise were compared.

RESULT

(Means)	Age	TRUS volume	Blood loss ml	+ve Margins (%)	Hospital Stay (Days)	Severe Incontinence (%)	PSA Rise (%)
RR	61	54	2187	42	8.6	0	18
RP	64	39	938	43	6.8	17	72

CONCLUSION

This study shows that in comparable groups of patients, radical retropubic prostatectomy was associated with more blood loss and longer hospital stay. However, positive margins, incontinence and rise in PSA were less favourable in the radical perineal prostatectomy group. This study continues prospectively from 2004 to date.

P112

Urinary function, incontinence and erectile dysfunction following contemporary radical treatment for prostate cancer using brachytherapy or extraperitoneal laparoscopic radical prostatectomy

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St.Luke's Cancer Center, RSCH, Guildford, †Bristol Royal Infirmary, ‡North Hampshire Hospital, Basingstoke, UK

INTRODUCTION

Symptomatic outcomes including, Erectile Dysfunction (ED), urinary problems (UP) and urinary incontinence aid bother UIAB) from brachytherapy (BXT) and laparoscopic radical prostatectomy (LRP) are reported from UK centers (2:LRP/1:BXT).

PATIENTS AND METHODS

EORTC-PR25 and IIEF-5 questionnaires were completed before treatment (BXT n = 189, LRP n = 101) and at 3/6/12/18 months. LRP Nerve-Sparing was Bilateral (BNS)-35%, Unilateral (UNS)-12% and not-attempted(NNS)-53%. Potency was defined as IIEF-5 > 11.

RESULTS

Brachytherapy potency preservation (PP) was: 53%–12 m and 58%–18 m. Changes of 'Moderate' clinical significance in the UP domain occurred up to 6 m with changes of 'a little' significance thereafter. No significant changes in UIAB score occurred. Overall PP was 30% at 12/18 m for all LRP patients, but 67% – 12 m and 43% – 18 m after bilateral nerve-sparing. No significant change in the UP domain occurred following LRP. Clinically significant deterioration in UIAB of at least 'moderate' intensity occurred at every follow-up; similar changes occurred at 3 and 6 m in the BNS group (no patients who reported UIAB problems in the BNS group had 12 or 18 m data yet).

CONCLUSION

Both treatments significantly adversely affect potency rates. Incontinence is a 'moderate' problem after LRP and these changes persist up to 18 m. 'Moderate' changes in the urinary problem domain after brachytherapy improve to 'a little' clinical significance after 6 m.

	Potency For Patients Potent Preop (IIEF > 11)		EORTC PR25 Urinary Problems (UP) Mean (SD)				EORTC PR25 UIAB Mean (SD)			
	12 m FU	18 m FU	Pre	3 m	12 m	18 m	Pre	3 m	12 m	18 m
All LRP	30% (n = 20)	30% (n = 10)	8.3 (19.3)	6.8 (13.4)	4.9 (13.1)	6.6 (12.3)	5.6 (19.2)	27.6 (30.6)	21.4 (21.1)	19.1 (26.2)))
BNS LRP	67% (n = 9)	43% (n = 7)	7.4 (21.4)	5.1 (9.2)	4.0 (11.4)	3.0 (6.7)	13.3 (29.8)	20.5 (21.6)	0	0
All BXT	53% (n = 28)	58% (n = 19)	8.1 (9.6)	23.9 (16.5)	15.9 (13.2)	15.9 (14.7)	0	0.8 (6.4)	0.4 (3.5)	0

P113

The potential role of actuarial life expectancy in the management of early prostate cancer: a judgment analysis of consultant urologists

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Taunton and Somerset Hospital, Taunton, UK

INTRODUCTION

To assess how Consultant Urologists use information such as predicted life expectancy and disease severity in the management of early prostate cancer.

PATIENTS AND METHODS

Thirty Consultant Urologists reviewed 70 prostate cancer patient scenarios. Each scenario contained seven commonly used 'cues' (e.g. PSA, patient choice) and two novel cues [predicted life expectancy and 10 year survival probability – calculated by the computerised Measure of Actuarial Life Expectancy (male©) designed at our centre]. For each scenario, Consultants recorded how strongly they would adviseradical prostatectomy, radiotherapy ± hormones or active surveillance/hormones. Use of each 'cue' was assessed by Judgement Analysis methodology.

RESULTS

On average, Consultants used only 3 of the possible 9 'cues' in decision-making. PSA and predicted 10-year survival probability were used most commonly, whilst patient choice was used infrequently. Consultants were on average, only 68.6% consistent at

decision-making when repeat cases were analysed.

CONCLUSIONS

Consultants used a limited number of patient factors to formulate treatment decisions. Patient choice was used infrequently, an issue which should be addressed. Predicted 10-year survival probability was used by the majority of consultants. Whilst not yet routinely available, this appears to be a potentially useful factor in targeting prostate cancer treatment appropriately.

P114

Is there a role for magnetic resonance imaging (MRI) in the management of T1c carcinoma prostate?

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OBJECTIVE

To assess the role of magnetic resonance imaging (MRI) in the management of T1c prostate cancer.

METHODS

Data was collected from our oncology database where all new prostate cancers are recorded for a period of 3 years ending May 2005. Gleason grade, clinical stage, cross-sectional imaging result and subsequent treatment were also recorded. The results of patients with T1c prostate cancer undergoing MRI prior to radical treatment (radical prostatectomy of radical radiotherapy) were analyzed to see whether the MRI scans result altered the modality of treatment offered to the patient.

RESULTS

A total of 765 patients were diagnosed with prostate cancer. Of the 177 patients with T1c disease, 117 were considered eligible for radical treatment and underwent a MRI scan. Of the 117, 111 patients had negative scans that showed no extracapsular invasion while five were equivocal. All the five had further investigation either by CT scanning or targeted biopsies, which confirmed the cancer to be localized. In only one case did the MRI upstage T1c disease to T3.

CONCLUSION

Routine cross sectional imaging is not necessary in patients with T1c prostate cancer because in only 0.8% of patients were the treatment plan influenced by the MRI result.

P115

Visually directed HIFU for prostate cancer – preliminary UK experience

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The Institute of Urology and Nephrology, University College Hospital, London, UK

INTRODUCTION

Trans-rectal High Intensity Focused Ultrasound (HIFU) is a non-invasive ablation therapy that has been used for the treatment of organ confined prostate cancer. We report the first description of the outcomes produced when real time grey scale feedback is used as the principal determinant of dose.

METHODS

Twenty five men, mean age 61 (50 to 76) have been treated with a minimum of 3 months follow-up. Disease stage was T1 or T2, mean PSA 8.00 (3.00–14.80) and mean Gleason score 6 (5–7). None had previous hormone or 5-alpha reductase inhibitor therapy. Men received a single treatment using the Sonablate-500 (Focus Surgery, IN, USA). Grey scale changes were assessed during treatment and used to guide ultrasonic exposure.

RESULTS

Twenty one patients treated have achieved PSA nadirs of ≤0.2 ng/l three months after treatment. Seven patients have achieved undetectable PSA values. The mean operative time was 248 min (200–345).

CONCLUSIONS

Visually directed HIFU can achieve low PSA nadirs. PSA levels have fallen to 0.2 ng/l or less in 84% of cases and to an undetectable level in seven patients. Accrual of further patients and longer term follow up will confirm whether the PSA nadirs are maintained.

P116

Are the USA prostate brachytherapy results reproducible in the UK?

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Departments of Urology and Oncology, St Luke's Cancer Centre, Royal Surrey County Hospital and the Department of Statistics, Postgraduate Medical School, University of Surrey, Guildford, UK

INTRODUCTION

We present prospective outcome and toxicity data for first 300 consecutive patients who underwent prostate brachytherapy with up to 82 months follow up.

METHOD

Data collected from prospective brachytherapy database. Median follow-up 45 m (33–82 m). Patients classified into low (49%), intermediate (37%), and high (14%) risk. Received BXT alone or in combination with neoadjuvant androgen deprivation and/or pelvic radiotherapy. International Index of Erectile Function (IIEF-5) completed prior to brachytherapy and post implant. IIEF-5 <12/25 classed impotent. Catheter use and stricture rate recorded.

RESULTS

Prostate cancer survival 99%; 21 patients (7%) biochemically failed (ASTRO). 5 year PSA relapse-free survival 93%. No significant difference in survival between hormone naive (95%) and hormone treated (92%) patients or different risk categories (low-96%; intermediate-89%; high-93%). 3 year median PSA 0.3 (n = 178).72% patients 3 year PSA < OR = 0.5. 205/300 patients completed baseline and >1 post implant IIEF-5 questionnaire; 51% (n = 104) potent pre-implant. Erectile function at 3 m – 50% (n = 44); 6m – 44% (n = 43); 12 m – 59% (n = 41); 18 m–62% (n = 39); 24 m–62% (n = 53); 30 m 59% (n = 32). Acute urinary retention rate 7%. 5.6% have had post implant urethral strictures requiring dilatation.

CONCLUSION

This prospective study confirms excellent overall biochemical survival and favourable toxicity data following I-125 brachytherapy and is comparable with the best US data.

Thursday 29 June 11.00–12.00
Renal Cancer and Laparoscopic Nephrectomy
Chairmen: M. Aitchison and F. Keeley

P117

Inflammation and interleukin-6: only half the story?

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INTRODUCTION

A systemic inflammatory response, as quantified by C-reactive protein (CRP) and the pro-inflammatory cytokine interleukin-6 (IL-6,) is associated with poorer outcome in patients with renal cell cancer (RCC.) (Bromwich *et al.* BJC. 2004; 91:1236–8, Negrier *et al.* J Clin Oncol 2004;.22:2371–8) The relationship between CRP, IL-6, and anti-inflammatory cytokines such as interleukin-10 (IL-10) has yet to be examined in renal cancer.

METHODS

Forty three patients with localised, non-metastatic RCC, eight patients undergoing cytoreductive nephrectomy, and seven patients requiring nephrectomy for benign conditions were recruited. Pre-operative blood sampling was performed for cytokines in addition to routine serology.

RESULTS

Concentrations of IL-6 and IL-10 were significantly higher in the cancer group (P < 0.05, Mann–Whitney) than benign disease. Patients with metastatic RCC had significantly higher concentrations of CRP, IL-6, and IL-10 compared with localised RCC. (P < 0.005, Mann-Whitney) On mul-

tiple linear regression of log-CRP and log-IL-6 and IL-10, both IL-6 ($P < 0.001$) and IL-10 ($P < 0.001$) were independently correlated with C-reactive protein ($r^2 = 0.75$, $P < 0.001$).

CONCLUSION

Concentrations of pro-inflammatory IL-6 and anti-inflammatory IL-10 increase with TNM stage. Both IL-6 and IL-10 appear to be important in regulating CRP concentrations. IL-10, as an anti-inflammatory cytokine, may indicate host response to tumour, and has potential as a prognostic marker.

P118

Identifying the metastatic switch in renal cancer

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INTRODUCTION

Mutations in the von Hippel-Lindau (VHL) gene underly the majority of sporadic and familial CCRCC. Loss of function of VHL leads to activation of the transcription factor Hypoxia Inducible Factor (HIF). The two main forms of HIF (HIF1 and HIF2) have different patterns of expression and downstream targets. We hypothesised that HIF-2 expression is important in promoting proliferation and metastasis in CCRCC.

METHODS

Nephrectomy specimens from VHL ($n = 7$) and sporadic CCRCC ($n = 45$) were examined using immunohistochemistry for CAIX, HIF-1, HIF-2, CyclinD1, Ki67 and in situ hybridisation for VEGF.

RESULTS

The majority of sporadic CCRCC exhibited strong expression of HIF-1 and HIF-2, consistent with loss of VHL. Eight tumours had areas with predominant HIF2 expression and reduced/absent HIF1. Six of these (80%) had metastases either on presentation or within 6 months of surgery ($P < 0.001$). Analysis of adjacent sections reveal areas with predominant HIF-2 had reduced CAIX, and increased VEGF, Cyclin D1 and cell proliferation ($P < 0.0001$). Furthermore, examination of metastatic CCRCC deposits ($n = 5$) reveal strong expression of HIF-2.

CONCLUSION

Our results support the tumorigenic role of HIF2 in the context of renal cancer and suggest that selective antagonism of HIF2 may be valuable in the treatment of CCRCC.

P119

The relationship between tumour T-lymphocyte infiltration, the systemic inflammatory response and survival in patients undergoing resection for renal cancer

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Department of Urology, Gartnavel General Hospital, Glasgow, UK

INTRODUCTION

The inter-relationships between the local and systemic inflammatory responses and outcome do not appear to have been examined in patients with renal cancer. The aim of the present study was to examine the relationship between tumour T-lymphocyte subset infiltration, circulating C-reactive protein and cancer-specific survival in patients who had undergone resection for renal cancer.

PATIENTS AND METHODS

Patients with renal clear cell cancer, undergoing resection from 1997 to 2004 ($n = 82$) were included. Patients were staged using computerized tomography and pathological staging including grade. Pre-operative C-reactive protein was measured and histological staining for CD4+ and CD8+ T lymphocytes performed on all cases.

RESULTS

On multivariate analysis tumour stage (HR 5.42, 95% CI 1.47–19.97, $P = 0.011$), grade (HR 2.51, 95% CI 1.31–4.83, $P = 0.006$), CD4+ T-lymphocytic infiltration (HR 2.10, 95% CI 0.92–4.76, $P = 0.076$) and C-reactive protein (HR 4.97, 95% CI 1.52–16.24, $P = 0.008$) were independent predictors of cancer specific survival. Increased tumour CD4+ T-lymphocytic infiltration was associated with an increase in stage ($P < 0.10$),

grade ($P < 0.01$), percentage tumour CD8+ T-lymphocytes ($P < 0.001$) and C-reactive protein ($P < 0.05$).

CONCLUSION

The results of the present study show that upregulation of both local (CD4+ T-lymphocytic infiltration) and systemic inflammatory (C-reactive protein) responses are associated with poor outcome in patients undergoing surgery for renal cancer.

P120

The relationship between the pre-operative systemic inflammatory response and cancer specific survival in patients undergoing potentially curative resection for renal clear cell cancer

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Department of Urology, Gartnavel General Hospital, Glasgow, UK

INTRODUCTION

The aim of the present study was to examine the prognostic value of the systemic inflammatory response in patients undergoing potentially curative resection for renal cancer.

PATIENTS AND METHODS

The relationship between tumour stage, grade (Fuhrman), performance status (ECOG), a combined score (UCLA Integrated Staging System, UISS), systemic inflammatory response (elevated pre-operative C-reactive protein concentration), and cancer specific survival was examined in patients undergoing potentially curative resection for renal clear cell cancer ($n = 100$).

RESULTS

On univariate survival analysis, gender ($P = 0.050$), tumour stage ($P = 0.001$), Fuhrman grade ($P < 0.001$), UISS ($P < 0.001$), C-reactive protein ($P = 0.002$) were significant predictors of survival. On multivariate analysis with gender, UISS and C-reactive protein entered as covariates, only UISS (HR 2.70, 95% CI 1.00–7.30, $P = 0.050$) and C-reactive protein (HR 4.00, 95% CI 1.21–13.31, $P = 0.024$) were significant independent predictors of survival.

CONCLUSION

The results of the present study show that, in patients who have undergone potentially curative resection for renal clear cell cancer, the presence of a systemic inflammatory response predicts poor cancer specific survival.

P121

Pre- and Intraoperative use of Trans-oesophageal Echocardiogram (TOE) is invaluable in management of Renal Cell Carcinoma (RCC) extending into the IVC

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Royal Marsden Hospital and Royal Brompton Hospital, London, UK

INTRODUCTION

Accurate imaging is important in patients with RCC extending into the IVC. We have assessed the use of TOE in the pre- and per-operative setting.

PATIENTS AND METHODS

Between1994 and 2005 we have seen 118 patients with RCC and IVC extension. A total of 46 of these had thrombus extending to the hepatic IVC or higher and all underwent TOE to assess the need for surgery on cardiovascular bypass (CVBP).

RESULTS

The criteria for CVBP were extension into the right atrium, hepatic or contra-lateral renal vein, bulky supra-hepatic vein disease and/or clear evidence of adherence to the IVC. Based on these, CVBP was deemed unnecessary in eight. The remaining 38 patients had surgery on CVBP with continuous intra-operative TOE monitoring. Intra-operative TOE identified thrombus embolus during surgery in two and a pulmonary embolectomy was performed. In six patients following extraction of the main thrombus, intra-operative TOE identified residual disease (in hepatic vein 1, atrium 2 and IVC 3) and thus further thrombectomy was performed.

CONCLUSION

Use of pre- and intra-operative TOE helps patient selection, identifies intra-operative thrombus embolisation and assists in full clearance of IVC thrombus. We recommend the use of TOE patients with RCC and IVC extension.

P122

Results from the National Laparoscopic Nephrectomy Audit 2004–2005: Do Higher Volume Centres have Better Clinical Outcomes?

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On behalf of BAUS section of Endourology, Bristol Urological Institute, Bristol, UK

INTRODUCTION

Data are presented from the BAUS UK national laparoscopic nephrectomy audit for 2004–2005.

PATIENTS AND METHODS

Each year, consultants performing laparoscopic nephrectomy are invited to submit prospectively collected data on all patients treated. Between July 2004 and June 2005, 44 Centres provided data on 758 laparoscopic nephrectomies.

RESULTS

The majority of cases were for renal cell carcinoma (48%) and non function (26%). Mentoring occurred in 24% of procedures. The median (range) operative duration was 160 (60–483) min. The median postoperative stay was 4 days, with a wide range reflecting non-clinical reasons for delayed discharge. There were two deaths resulting in a mortality rate of 0.3%. The mean complication rate was 21%, but only 5% were categorized as major complications. The transfusion rate was 8%. Only 43% of centres performed at least one procedure per month. These centres had lower transfusion (8% vs. 10%), conversion (5% vs. 14%) and complication (20% vs. 26%) rates.

CONCLUSION

The BAUS laparoscopic nephrectomy audit is an effective method for ensuring safe implementation and compliance with internationally accepted standards. This audit has shown differences in clinical outcomes in favour of high-volume centres, which may help to inform decisions about the centralisation of urological laparoscopy services.

P123

Early experience with combined percutaneous radiofrequency ablation (RFA) and ethanol injection of renal tumours

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Guy's and St Thomas' Hospital, London, UK

INTRODUCTION

We evaluate a novel technique for percutaneous ablation of RCC using combined radiofrequency coagulation and ethanol injection.

METHODS

Under radiological guidance absolute ethanol is injected into the tumour prior to insertion of an ablation electrode. CT is performed the following day and three monthly thereafter. Persistence of enhancing areas is considered suspicious for residual disease.

RESULTS

Twenty tumours in 19 patients [13 males, mean age 67 (41–84 years)] have been treated since 2002. Eight tumours were <2 cm, eight 2–3 cm, three 3–4 cm and one >4 cm.

Seventeen patients were treated under sedation, two had general anaesthesia. A mean of 1.4 ml ethanol (0.5 3 ml) was injected. The length of the procedure varied from 6 to 36 min (mean 16 min). Median length of stay was 2 days (1–5 days).

One patient had a subcapsular haematoma treated conservatively. Two patients complained of transient loin pain.

Complete necrosis was observed on CT in 17 patients. Two patients were retreated after the first follow-up scan. No recurrent disease has been identified during a mean follow up of 20 months (1–40 months).

CONCLUSION

Radiofrequency ablation combined with ethanol injection is a promising technique in the treatment of RCC. It is safe and well tolerated.

P124

Initial experience of laparoscopic partial nephrectomy (LPN)

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INTRODUCTION

Partial nephrectomy is now recommended for pT1a renal cell cancer. With increasing experience, this surgery can be performed laparoscopically.

MATERIALS AND METHODS

Between January 2003 and January 2006, 39 partial nephrectomies were performed, of which 18 were performed laparoscopically. A retrospective review of patients records who underwent LPN was performed.

RESULTS

The average age was 60 years. Two thirds of the patients were male. Thirteen cases (72%) were discovered incidentally. Preoperatively three patients (16%) had impaired renal function. The average operating time was 180 (105–300) minutes and the average blood loss was 450 (100–1500) ml. All but one patient had vascular occlusion during surgery. The average warm ischaemia time was 37 (30–58) minutes. Margins were positive in two cases (11%). The median hospital stay was 5 (2–26) days. Five patients received a blood transfusion. Six patients had complications which included: bleeding, urine leak and urinary tract infection. Three patients (17%) had an increase in serum creatinine greater than 20 mmol/l.

CONCLUSION

Laparoscopic partial nephrectomy can be carried out safely but requires considerable laparoscopic skill and expertise. It is not without significant morbidity and long term follow up is required.

P125

Audit of post-operative analgesia post laparoscopic nephrectomy

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Freeman Hospital, Newcastle-upon-Tyne, UK

INTRODUCTION

Laparoscopic nephrectomy is increasingly performed for benign and malignant disease. Postoperative pain and nausea can delay patient recovery and discharge. The aim of this study was to establish if patient controlled analgesia (PCA) offers benefits over oral analgesia in patients post laparoscopic nephrectomy.

MATERIALS AND METHODS

Data was collected prospectively. Trust validated 0–10 pain score, 0–3 nausea and vomiting score and patient satisfaction questionnaires were administered pre, peri and post operatively. Hospital stay was also calculated.

	PCA	Oral analgesia
Mean pain score day 1	6	6
Mean pain score day 2	5	4
Mean pain score day 3	5	4
Mean nausea and vomiting score	0.7	0.8
Average length of stay (days)	4	3.5

RESULTS

Sixteen patients received oral analgesia and sixteen received PCA. A variety of oral analgesics and anti-emetics were used. Current treatments were very effective in treating postoperative nausea and vomiting. There was no difference in pain scores or average length of stay between the PCA and oral analgesia group. Twenty-nine of the thirty two patients (91%) were satisfied with their pain relief.

CONCLUSIONS

There is no clear benefit of PCA compared to oral analgesia in patients undergoing laparoscopic nephrectomy.

P126

Laparoscopic nephrectomy for inflammatory renal conditions is safe but time consuming

M. WINKLER and D. HROUDA
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INTRODUCTION

As many urologists become increasingly familiar with laparoscopic Nephrectomy more challenging cases will be selected. We have reviewed our experience with laparoscopic Nephrectomy for inflammatory conditions and compared peri-operative factors with those for laparoscopic Nephrectomy for renal tumours.

METHODS

Forty two laparoscopic nephrectomies (group 1) for pyonephrosis, chronic pyelonephritis due to obstructive nephropathy, staghorn related chronic pyelonephritis (17 patients) and xanthogranulomatous pyelonephritis and 80 radical laparoscopic nephrectomies for renal tumours (group 2) were identified from our database of 179 laparoscopic procedures and audited for operating time, hospital stay, transfusion rate and complication rate.

RESULTS

Mean operating times were significantly longer for group 1 (166 min vs. 148 min, $P = 0.04$). Significant peri- and post-operative complications were lower in group 1 with 7% (3/42) vs. 30% (24/80) in group 2, ($P = 0.005$). The observed shorter hospital stay and reduced complication rate for group 1 are possibly related to a significantly younger mean age of 47 years vs. 64 years ($P < 0.0001$) and reduced comorbidity. Transfusion rate was 0% for group 1 compared to 3.7% for group 2. Conversion rate was similar for both groups with 2.5%.

CONCLUSION

Although more time consuming laparoscopic Nephrectomy for inflammatory renal conditions is safe and has a comparatively low transfusion and conversion rate.

Thursday 29 June 14.00–15.00
Imaging
Chairmen: B. Ellis and D. Rickards

P127

What radiation exposure can a patient expect during a single stone episode?

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INTRODUCTION

There is increasing concern about the risks of radiation exposure in clinical practice. There is no sound clinical evidence outlining the likely radiation exposure a patient can expect during a single, complete urinary stone episode.

PATIENTS AND METHODS

The hospital records of 60 consecutive 'all comers' who had become or were rendered stone free were studied.

RESULTS

There were 60 patients with 68 stones (15 renal, 9 upper, 12 middle and 32 lower ureter) with a mean stone burden of 5.13mm. 23 underwent surgery and 9 ESWL. Total effective doses ranged from 1.77 milli-Sieverts (mSv) to 25.21 mSv (Mean 7.51 mSv, 95% C.I. 6.25–8.77). Renal and proximal ureteric stones resulted in the highest radiation exposures. The mean total dose in patients who had CT to aid diagnosis was 11.74 mSv compared to 6.22 mSv in non CT diagnosed disease.

CONCLUSION

This is the first attempt to identify the patient's irradiation exposure from diagnosis to being rendered stone free for a single stone episode. A radiation exposure dose of 10 mSv is estimated to carry a 1:2000 risk of fatal cancer in the 16–69 year old patient group.

P128

Should image-guided biopsy precede surgery in patients with indeterminate renal masses?

B. SOMANI, G. NABI, H. GUPTA, P. THORPE, S. SWAMI and S. MCCLINTON
ABACUS Research Group, Aberdeen Royal Infirmary, Aberdeen, UK

INTRODUCTION AND OBJECTIVES

The role of image-guided biopsy in the management of indeterminate renal masses (refractory to categorisation on the basis of radiological features alone) remains debateable. The present study examines our experience and its impact on clinical management.

MATERIALS AND METHODS

Twenty-two patients with indeterminate renal masses underwent image-guided biopsies between 1999 and 2005. The incidence of malignancy and percentage of lesions proceeding to surgery or other follow up were determined. The final surgical results were correlated with pre-surgery biopsy findings.

RESULTS

In 13 patients' histopathological examination of biopsy specimens confirmed malignancy (59%). In the 10 patients who went on to surgery these findings were identical to the surgical histopathology (renal cell carcinoma in 9, transitional cell carcinoma in 1). The remaining three patients did not proceed to post-biopsy surgical treatment (unfit for surgery in 2, lymphoma in 1). In nine patients no malignancy was found on biopsy [aspiration of cystic masses Bosniak II-III (7), tuberculosis (1), non-diagnostic (1)] and these patients were followed up at six monthly intervals as appropriate. There were no interval radiological changes at a mean follow up of 22 months (range 6–48 months). There were no procedure related complications.

CONCLUSIONS

Image guided biopsy is safe, can accurately diagnose malignancy and helps to characterise indeterminate renal masses so avoiding unnecessary surgery.

P129

Percutaneous nephrostomy tube insertion: radiologists versus urologists?

A. PAHUJA, R. NOADE, L. JOHNSTON, T. THOMPSON and B.W. ELLIS
Belfast City Hospitals NHS Trust, Belfast, UK

INTRODUCTION

The new grade of consultant urologist is expected to be capable of diagnostic level 1 ultrasound scan (USS) (Ellis B *et al.* Ultrasound in Urology 20-3-2005; 1–120. London, NHS Modernisation Agency) and also perhaps perform ultrasound guided invasive procedures of kidney. As in many units our interventional radiology service is overcommitted. For 20 years we have performed most of the renal punctures for percutaneous nephrostomy (PCN) and percutaneous nephrolithotomy ourselves.

METHODS

We have begun a retrospective analysis of PCN. So far 100 patients have been reviewed. Discipline and grade of the operator, mode of imaging and complications were recorded.

RESULTS

64% of PCN were performed by urologists and 36% by radiologists. USS was the mode of imaging in 57% and X-ray in 43%. Overall complications by discipline were 10% each. Early complications of tube insertion included sepsis and haemorrhage 1% each. An additional 18% tubes malfunctioned after insertion, including dislodgement in 13%, occlusion in 2%, peritubular leakage in 2% and puncture site infection in 1%.

CONCLUSION

We have shown that nephrostomy tubes can be placed safely by urologists using USS even without full formal training. Close working relationship between radiologists and urologists is crucial. The challenge remains to teach USS to new grade of urology trainees and to those in post who wish to learn it.

P130

Planning percutaneous renal stone surgery: differences between 16-slice three-dimensional computed tomographic urography and intravenous urography

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INTRODUCTION

We prospectively evaluated three-dimensional CT urography (3DCTU) and IVU for planning percutaneous nephrolithotomy (PCNL).

PATIENTS AND METHODS

Eleven patients underwent IVU and 3DCTU (16-slice CT) before PCNL. All imaging was reviewed by an endourologist and uroradiologist prior to surgery. The following were assessed: stone burden, percutaneous access plan versus actual route, calyceal orientation, anatomical and planning confidence visual analogue scale (VAS), and requirement for further fluoroscopic information.

RESULTS

Twenty six calculi were identified on 3DCTU. 91% of patients had extra calculi identified on 3DCTU ($P = 0.0004$). Percutaneous access plan using 3DCTU differed from IVU in 6/11 patients. At surgery, 7/11 and 4/11 had infra-12 and supra-12 punctures respectively. Correct operative calyceal target was predicted using IVU in 27% and 54% using 3DCTU. 3DCTU provided calyceal orientation in 10/11 whilst IVU provided this in only one patient. Mean anatomical and planning confidence VAS was significantly better for 3DCTU vs. IVU: 9.21 vs. 6.65 ($P = 0.0003$) and 8.75 vs. 5.62 ($P = 0.0001$) respectively. After IVU, 10/11 needed further information from fluoroscopy whilst this was required in only 5/11 after 3DCTU ($P = 0.03$).

CONCLUSIONS

16-slice 3DCTU provides significantly more information for planning PCNL. 3DCTU is better for assessing stone burden, intrarenal anatomy and choosing percutaneous access route.

P131

Imaging in haematuria

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INTRODUCTION

Few guidelines are available for haematuria investigation. Abdominal ultrasound, flexible cystoscopy and urine cytology are used for all haematuria patients. IVU is added for frank haematuria (FH). This is a prospective analysis to evaluate imaging investigations.

PATIENTS AND METHODS

2087 prospective patients were studied since January 1999. Data set included patient details, presentation, smoking history, imaging, cystoscopy, urine cytology, outcome and management.

RESULT

899 cases had microscopic haematuria (MH) and 1188 FH. The male to female ratio was 1.9. 8.6% of the patients were under 40 years. Below 40 years, there were no urological malignancies in MH and 0.3% in FH. Above 40 years, 4.3% of MH and 20.1% of FH patients had urological malignancy. In FH patients, 17.7% had bladder carcinoma, 2.4% had RCC. 1.1% had renal pelvis TCC and 1 patient had urethral melanoma. Ultrasound detected 97% and 57.0% of tumours in kidney and bladder respectively. It failed to detect 1 case of the 30 renal tumours. IVU identified one RCC and 2 TCC which were missed on ultrasound.

CONCLUSIONS

Ultrasound (with flexible cystoscopy) is the main imaging modality for haematuria. IVU is still indicated in frank haematuria.

P132

Bladder cancer detection using CT urography

B.W. TURNEY, J.P. CREW and N.C. COWAN
Churchill Hospital, Oxford, UK

INTRODUCTION

A prospective study to evaluate the use of CT Urography (CTU) for diagnosis of bladder tumours in patients with macroscopic haematuria over 40-years of age.

PATIENTS AND METHODS

Same day CTU and flexible cystoscopy were performed in 200 consecutive patients attending a fast-track haematuria clinic. CTU studies were scored on a 5-point scale to quantify the probability of bladder cancer. Flexible cystoscopies were performed independently and scored using a 3-point scale. Comparisons were made between cystoscopy, pathological findings and CTU.

RESULTS

Prevalence of bladder tumours in this study was 24%. CTU was 92% sensitive, 92% specific, with 79% positive and 97% negative predictive values for the detection of bladder cancer when compared to the histopathological findings.

CONCLUSIONS

CTU offers an accurate method of detecting bladder tumours in this patient group. Our results support the use of CTU as a first line screening investigation for this high risk group. The use of CTU for assessing the bladder will obviate the need for cystoscopy in patients with a negative CTU and allow those patients with obvious tumour to be referred directly for resection. CTU allows comprehensive evaluation of the urinary tract with a single test for upper and lower tract assessment.

P133

The double wire technique – an improved method for treating challenging ureteroileal anastomotic strictures and occlusions

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INTRODUCTION

3–10% of patients with an ileal conduit urinary diversion will develop uretero-intestinal anastomotic stenosis. Classical management was laparotomy and open revision but recently there has been increasing use of endourological techniques. We describe a novel technique to access the anastomosis.

METHODS

After initial loopogram, a guidewire is inserted into the non occluded ureter. A customised guiding catheter is advanced to the anastomosis which facilitated greater control for passing a second catheter and guide wire combination. Once bilateral guide wires are in place, anastomotic balloon dilatation was undertaken.

RESULTS

Seven procedures were undertaken in four patients to treat ten anastomoses. Nine anastomoses were successfully treated with a primary retrograde approach, one required an antegrade puncture. There were no intra- or post procedural complications. At 19 months, all anastomoses remained patent.

CONCLUSIONS

Crucially, the key to endourological techniques is access to the anastomosis; typically, via a percutaneously placed nephrosotomy. The ideal route is via a retrograde approach but this is also often difficult. We have described a novel technique that utilizes two guidewires and a guiding catheter that allowed retrograde ureteral access with relative ease. This technique appears safe and painless and an improvement in obtaining access to the uretero-ileal anastomosis.

P134

An analysis of subcentimetre impalpable testis pathology

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INTRODUCTION

With the increasing routine use of ultrasound, small, impalpable, incidental, intratesticular abnormalities present an escalating management conundrum. We evaluated the incidence and outcome of these abnormalities.

METHODS

Over an eight-year period within a single regional adult urology unit 1544 testicular ultrasounds were performed for a wide variety of the usual clinical indications. Incidental, impalpable, sub-centimetre testis abnormalities were identified and each case was reviewed.

RESULTS

In total, 12 impalpable sub-centimetre lesions were identified with a mean size 4.9 mm (range, 1.5–9.8 mm). Indication for ultrasound scan was pain (n = 5), contralateral 'lump' (epididymal cyst; n = 5) and infertility (n = 2). Although each patient was consulted regarding surgical exploration for diagnostic purposes, the initial management of these lesions has been close observation with serial ultrasound and clinical review. Three anechoic lesions (consistent with intratestis cysts) each showed no change at mean 26 months follow-up. Of eight hypoechoic lesions followed to a mean 34 months, only one increased in size and was diagnosed with a 1.0 cm stage 1 seminoma following orchidectomy. One hyperechoic lesion of uncertain aetiology remains unchanged at 6 months follow-up.

CONCLUSIONS

A high percentage of sub-centimetre testis lesions may be benign in nature.

P135

Can transrectal power doppler (TRUS–PD) predict the preservation of erectile function and urinary continence following high intensity focused ultrasound (HIFU) for early prostate cancer?

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INTRODUCTION

The delicate balance of harms and benefits in prostate treatments causes men to face difficult decisions when it comes to deciding upon a treatment. We evaluated the use of TRUS-PD in predicting erectile and continence function following HIFU.

PATIENTS AND METHODS

Patients (n = 21; mean age = 56.7 years) were evaluated using the Sonablate®500 device (Focus surgery, IN) in <T3N0M0 early prostate cancer. TRUS-PD were performed at baseline, immediately post-HIFU, and at 2, 6 and 12 weeks post procedure. PD was used to assess maximum flow velocity (Vmax), resistance (RI) and pulsatility index (PI) in each NVB. This was correlated to IIEF-15 and CF questionnaires.

RESULTS

At baseline, all had intact NVB Doppler flow and normal erections. TRUS-PD demonstrated the preservation of NVB flow in all patients after HIFU. Tumescence returned in 80% at 12 weeks. There was a significant reduction of IIEF-15 at 12 weeks (P = 0.045). No significant change in PI or RI was observed. At 12 weeks, the CF score was not significantly different to that at baseline.

CONCLUSION

TRUS PD may provide near time feedback that can inform the operator of the impact of HIFU on erectile and continent functions.

P136

Pelvic MRI in staging early prostate cancer: does every patient need one?

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INTRODUCTION

MRI is frequently used to determine nodal status and extracapsular spread in clinically localised prostate cancer. Prior to June 2003 our unit routinely performed pelvic MRI before radical prostatectomy. Following an audit of the results a selective policy was then adopted, scanning only those with stage ≥cT2b, Gleason ≥4 + 3 or PSA >10. The results of this change were evaluated.

PATIENTS AND METHODS

A retrospective review compared protocol 1 (pre-June 2003) with protocol 2 (post-June 2003). There were 92 patients in each group. Data was extracted by review of patient notes and radiology/pathology databases. The rates of radiological and histological T3 disease were compared to determine the accuracy of MRI in assessing extracapsular spread.

RESULTS

	Protocol 1	Protocol 2
Number of patients	92	92
Number of MRI scans	78 (85%)	16 (17%)
Radiological T3	24 (30.8%)	3 (18.8%)
Histological T3	18 (19.6%)	20 (21.7%)
PPV	29.2%	100%
NPV	85%	76.9%
Sensitivity	46.6%	50%
Specificity	73%	100%

CONCLUSION

Adoption of a selective scanning policy dramatically reduced the number of staging MRI scans with no change in the rate of histological T3 disease. Pelvic MRI is poor at evaluating extracapsular tumour spread and should not be used routinely for this indication alone.

P137

Cross-sectional imaging in localised prostate cancer. Should you believe it?

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INTRODUCTION

MRI is the preferred cross-sectional imaging modality for patients suitable for radical treatment for localised prostate cancer. We sought confirmation that EAU guidelines for pre-treatment MRI were applicable in our patient population.

PATIENTS AND METHODS

The clinical, biopsy and radiological stage were compared with post resection pathological stage in 173 patients undergoing radical prostatectomy.

RESULTS

MRI was 60% sensitive and 87% specific with a positive predictive value of 0.63 for extracapsular spread. On subgroup analysis MRI staging in patients with biopsy Gleason score ≤6 or biopsy tumour volume ≤10% had a positive predictive value of 0.57 and 0.5 respectively, compared with 0.73 and 0.77 for those in a poor prognostic group with Gleason score ≥7 or biopsy tumour volume ≥25% respectively. PSA did not significantly influence the predictive value of MRI in this series.

CONCLUSION

Patients with good prognostic indicators (biopsy Gleason score ≤6 and tumour volume ≤10%) should not be denied radical surgery on the basis of radiological stage confirming the applicability of EAU guidelines in our patient population. Resources may be best invested in refining MRI techniques in higher risk patients (Gleason score ≥7 and high biopsy tumour volume) where the risk of extracapsular disease is greater.

Thursday 29 June 14.00–15.00
Prostate Cancer
Chairmen: H. Kynaston and P. Malone

P138

Theaflavins inhibit prostate carcinogenesis in the TRAMP mouse

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INTRODUCTION

The late age of onset of prostate cancer means that a delay in carcinogenesis will significantly reduce its incidence. Certain polyphenols from tea (*Camellia sinensis*) are putative chemopreventive agents. Both catechins from green tea and theaflavins from black tea inhibit prostate cancer cell growth *in vitro*. Green tea polyphenols, rich in catechins, inhibit carcinogenesis in the transgenic 'TRAMP' mouse model of prostate cancer. This experiment was designed to assess whether theaflavins have a similar effect.

METHODS

Forty-two TRAMP mice, aged 4 weeks, were allocated into three groups receiving water, water containing theaflavins (0.05%) or water containing catechins (0.05%) as their sole fluid source. The mice were sacrificed at 30 weeks of age; their prostates were dissected out and weighed.

RESULTS

The median prostate weights in both the theaflavin group (0.54 g) and the catechin group (0.28 g) were significantly reduced compared with the water-fed controls (1.01 g) ($P = 0.008$ and $P = 0.008$, Mann–Whitney *U*-test).

DISCUSSION

Both theaflavins and catechins reduce the mass of primary prostate tumours in the TRAMP mouse model, despite the heterogeneity of the tumour masses inherent in this model. This is the first *in vivo* evidence that theaflavins, from black tea, can inhibit prostate carcinogenesis.

P139

Celecoxib affects gene expression in patients with primary prostate cancer

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INTRODUCTION

We have performed microarray analysis on RNA extracted from human prostate cancer (PC) biopsies of patients treated with either 4/52 400 mg celecoxib b.d. or no drug prior to radical prostatectomy.

PATIENTS AND METHODS

4 mm punch biopsies were taken from the right and left sides of the peripheral zone of the prostate at the base, apex and midzone, to give a total of six biopsies for 20 different PC patients, which were then all subsequently subjected to microarray analysis.

RESULTS

T-tests found statistically significant differences in gene expression profiles (GEPs) between the celecoxib-treated and control patients for 76 genes. Hierarchical clustering and principal component analyses demonstrated that the GEPs of the samples clustered well into drug and control groups based upon this gene list.

CONCLUSIONS

Our data suggest that a 4/52 neoadjuvant course of celecoxib 400 mg b.d. has significant effects of GEPs in patients with primary prostate cancer. Further analysis will determine the biological significance of these alterations in gene expression, but at present this data provides compelling evidence that celecoxib affects multiple genes arrayed in cancer oligosets in patients with primary prostate cancer.

P140

Biomarker discovery in prostate cancer using surface enhanced laser desorption ionisation 'time-of-flight' mass spectrometry

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OBJECTIVE

We set out to apply this novel proteomic approach to biomarker discovery in prostate cancer.

INTRODUCTION

Since the discovery of PSA over twenty years ago, the only advances which have been made in this field have related to optimising PSA and its molecular forms. It is well recognised that PSA is organ specific but not disease specific. SELDI 'TOF' MS allows selection and profiling of proteins according to characteristics such as charge, metal binding and degree of hydrophobia.

PATIENTS AND METHODS

Serum and urine were prospectively collected from patients with a raised PSA or abnormal digital rectal examination. All patients had a PSA <10 ng/ml. All samples were collected prior to trans-rectal ultrasound guided prostatic biopsies. The patients were grouped according to biopsy results. 352 protein profiles were created using six stringencies for serum and five for urine.

RESULTS

Statistical analysis revealed twenty proteins that appear to be differentially expressed between benign and cancer patients (each with $P < 0.05$).

DISCUSSION

Proteomic profiling of serum and urine using SELDI"TOF"MS offers a way of discovering new biomarkers that could potentially be used for the diagnosis of prostate cancer in the clinical setting.

P141

Characteristics of men with advanced prostate cancer identified through screening during the ProtecT trial

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INTRODUCTION AND PATIENTS

CaP consists of a randomised controlled trial (RCT) of screening by PSA testing in men aged 50–69 years in nine regions of the UK, with 250 000 men randomised to screening or no intervention. Within the screening arm there is a nested RCT of treatment (ProtecT: active monitoring versus radical prostatectomy versus radiotherapy). We have reviewed those men with advanced disease who were excluded from the treatment trial.

RESULTS

By October 2005, 59 491 of 118 982 men received PSA tests, 5,665 had a raised PSA >3 ng/ml (9.5%), 1,566 cancers were detected and 1,185 (76%) had localised disease. 213 men were excluded because of advanced disease. Metastases were found in 22; 8 men had nodal metastases, 11 had bone metastases and 3 had both. Most men underwent androgen ablation and radiotherapy (78/213) as initial treatment. A similar proportion received androgen ablation alone. A small number of men received radiotherapy without androgen deprivation (12/213), active monitoring (10/213), or radical prostatectomy (8/213).

CONCLUSIONS

During implementation of screening for prostate cancer in the UK, most cancers found (~ 75%) comprise early disease, but a fifth of the men had asymptomatic locally advanced or metastatic disease. The study is ongoing and funded by HTA.

P142

Analysis of performance of prostate cancer assessment (PCA) clinic – a 5-year experience.

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INTRODUCTION AND AIM

Our institution was one of the first hospitals in the UK to initiate a one-stop Prostate Cancer Assessment (PCA) Clinic. This study evaluates this clinic's performance.

METHODS

All the patients who attended the PCA clinic were included in the study. Patients with elevated PSA or abnormal digital rectal examination findings were assessed and after counselling TRUS guided prostate biopsy was performed if appropriate. All patients were offered the opportunity of a telephonic consultation to receive results. Those consented were contacted one week after biopsy. A satisfaction survey was performed twice and completed by 225 patients.

RESULTS

Total of 1032 patients have been assessed in the PCA clinic since august 2000. 982 patients underwent TRUS biopsy. 429 (44%) patients were found to have prostate cancer and 55 (6%) patients had suspicion of malignancy. 99% of patients had their TRUS biopsy result within 7 days. The patient satisfaction survey showed 96% of patients were satisfied with the service and 95% were happy to receive results by phone.

CONCLUSION

Prostate cancer assessment clinic is a highly efficient and cost effective method of evaluating patients at risk of prostate cancer. It standardises patient assessment with a high patient satisfaction rate.

P143

A high rate of clinically significant prostate cancer in whole-mounted cystoprostatectomy specimen of men with normal PSA

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INTRODUCTION

PSA does not correlate with tumour volume or outcome in contemporary American radical prostatectomy series. This is said to be a result high PSA screening penetrance and stage migration and may therefore not apply to English men.

METHODS

We have audited 78 male radical cystoprostatectomy specimen since 2001 for incidental prostate cancer. All men had normal preoperative PSA. Specimens were whole-mounted.

RESULTS

Prostate cancer was found in 48% of all specimens. 70% of these prostate cancers were clinically significant according to the criteria by Bostwick. Median tumour volume was 1.2 cc. The pre-operative PSA did not correlate with the tumour volume. This is work in progress and more detailed results will be available.

CONCLUSION

A high rate of clinically significant prostate cancer was found in English men undergoing cystoprostatectomy. PSA was normal and did not correlate with cancer volume suggesting that incidentally discovered but significant prostate cancer by today's standards may not be found with PSA screening.

P144

Androgen deprivation therapy for prostate cancer and fracture neck of femur: where is the evidence?

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INTRODUCTION

Patients on androgen deprivation treatment for prostate cancer are said to be at an increased risk of pathological fractures from the disease process itself or from the associated treatment[1]. However other reports have not observed this[2]. Against this background, we examined our database of Fracture of Neck of Femur (#NOF) in the Osteoporosis Unit to find out whether we are seeing a disproportionately more males with prostate cancer on Zoladex.

RESULTS

We found 14 patients who had androgen deprivation treatment for prostate cancer from 1,282 patients with #NOF between 1997 and 2003(7 years). There were 502 males and 962 females. Eight (8) of the 14 patients were further studied (Table 1). Their mean age was 84.8 years (mean 75–98), mean age at start of androgen deprivation therapy was 75 years (range 69–83 years), mean age at #NOF was 82 years (range 73–92 years). The average follow-up period was 78 months (range 48–120 months).

	Age (years)	Age @start of androgen deprivation (years)	Age@ NOF (years)	Period between start of androgen deprivation and #NOF (months)
FT	84	72	79	60
JB	80	76	86	120
WE	75	69	73	48
SC	85	75	79	48
GH	84	78	83	60
HR	98	83	92	108
WL	89	79	84	60
FJT	83	69	79	120
Mean Age (range)	84.8 (75–98)	75 (69–83)	82 (73–92)	78 (48–120)

(*=significant at least at $P < 0.05$ level)
The hazard ratio for developing AIPC was 4.36 in the localized disease group (*). The hazard ratio for death was 2.35 (*) in the metastatic disease group.

CONCLUSION

We did not find a disproportionately higher incidence of #NOFs in patients on androgen deprivation treatment for prostate cancer compared to the general population.

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P145

Bicalutamide monotherapy preserves bone mineral density, muscle strength and has significant quality of life benefits for men with locally advanced prostate cancer

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INTRODUCTION

The profile of prostate cancer (CaP) patients is changing to younger men. Androgen deprivation therapy (ADT) is commenced earlier. Bicalutamide 150 mg (Bic) is an alternative to castration, maintaining testosterone and may offer QoL benefits.

METHODS

Forty two men with advanced CaP and osteoporosis (T-score ≤-2.5) were treated with Bic. Bone mineral density (BMD) of

lumbar spine, total hip and forearm was measured at baseline and 1 year. RAND 36-Item Health Survey questionnaire, LFTs, PSA, testosterone and bone turnover markers BAP, PINP, CTX were measured 3 monthly. Arm anthropometry and dynamometry assessed skeletal muscle mass and quadriceps strength.

RESULTS

Thirty-eight completed the study. BMD was maintained (+2.1% lumbar spine, +1.2% total hip and +1.1% forearm). Decreases in PSA of over 75% were seen in most (34/38) within 3 months. 2/38 had mildly abnormal LFTs. No significant reduction in testosterone, bone markers, muscle mass or quadriceps strength was observed. Most retained pre-treatment levels of sexual function (81%) and physical activity (69%). Side effects included breast pain (71%), gynaecomastia (63%) and hot flushes (11%).

CONCLUSIONS

In osteoporotics, Bic maintains BMD. Bic provides an alternative for men wishing to retain physical and sexual activity, LH-RH analogues being reserved for those failing to respond or relapsing.

P146

Is there a benefit to MAB as opposed to monotherapy in the treatment of prostate cancer with intermittent hormone therapy?

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INTRODUCTION

The debate as to whether there is a survival advantage associated with the use of maximal androgen blockade compared with either antiandrogen or LHRH analogue monotherapy alone has raged since the advent of maximal androgen blockade. Our database of 1446 patients treated with intermittent hormone therapy for prostate cancer allows analysis of the effectiveness of these types of androgen suppression in various clinical scenarios.

METHODS

Individual patient data for 1446 patients treated with IHT for prostate cancer was collated. Multivariate analysis was undertaken based on Cox proportional hazards models. Patients were grouped according to prior treatment and absence or presence of metastasis.

RESULTS

TABLE 1: To show the hazard ratio for restarting treatment after initial pulse of therapy

Type of treatment	Localized disease – untreated	Biochemical recurrence	Metastatic disease
Monotherapy	Ref	1.53*	Ref
MAB	1.50*	Ref	1.31 (1.46)

CONCLUSION

Single agent therapy is suitable for patients with biochemical recurrence following failed attempt at cure with radiotherapy and/or prostatectomy. Our data suggests that there are benefits to the use of MAB in patients treated primarily with hormones.

P147

Zoledronic acid to prevent further bone loss in osteoporotic patients requiring androgen-deprivation therapy for prostate cancer

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INTRODUCTION

Androgen deprivation therapy (ADT) is the mainstay of treatment for advanced prostate cancer (aCaP). However, many are osteoporotic at presentation (Hussain *et al.* BJU Int. 2003;92:690–4). LH-RH analogues cause accelerated bone loss, whereas bicalutamide (Bic) preserves bone mineral density (BMD). We evaluated the efficacy of zoledronic acid (ZA) in osteoporotics.

METHODS

Forty-five osteoporotics (T-score ≤-2.5) with aCaP were studied prospectively. Group A (n = 17) received LH-RH, whereas Group B (n = 28) had Bic. All received 4 mg ZA three monthly for 1 year. BMD was measured by dual energy X-ray absorptiometry at baseline and 1 year, together with thoraco-lumbar X-ray. Bone turnover markers BAP, PINP, and CTX were measured three monthly.

RESULTS

Group baseline characteristics were similar. Group A (LH-RH + ZA) showed a 2.2% increase in lumbar spine BMD (P = 0.03), whereas Group B (Bic + ZA) showed a greater increase of 5.4% (P < 0.001). 7/45 exhibited vertebral fractures at presentation. No new fractures were observed. All markers decreased (P < 0.001). Group A: BAP – 29%, PINP – 58%, CTX – 57%; Group B: BAP – 25%, PINP – 44%, CTX – 33%. 5/45 experienced a transient influenza-like syndrome. No deterioration in renal function was observed.

CONCLUSION

In men with aCaP and osteoporosis, ZA increases BMD, greater so in those treated with Bic than LH-RH.