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Abstracts

BAUS Section of Endourology Meeting Abstracts

I. Is PCNL changing in the UK: Analysis of 9500 cases from the BAUS PCNL registry

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Introduction and methods: Percutaneous nephrolithotomy (PCNL) indications and techniques are evolving. BAUS developed an online data registry in January 2010 that now includes over 9500 procedures. We evaluate outcomes and practices in PCNL and compare with previous analyses of the registry at 1K and 5K procedures to highlight significant changes in PCNL practice in the UK.

Results: A total of 9536 procedures were analysed and compared with previous analyses of 1028 cases (2011, 1K) and 5191 cases (2015, 5K). Submission of cases has stabilised at approximately 2200 cases per year. Most PCNL is still prone, but supine continues to increase significantly from 5K analysis (22.4% vs. 16.2%, $P = 0.0001$). Access by an interventional radiologist showed a small but significant decrease from 5K analysis (63.3% vs. 66.3%, $P = 0.0004$), but not significantly different

from 1K analysis. No significant changes in tract dilatation methods are seen, with balloon dilatation most popular (64.3%). Consultants increasingly perform PCNL themselves rather than their trainees (96.5% vs. 84.4% (5K) vs. 79.0% (1K), $P = 0.0001$). Laser fragmentation usage has significantly increased (9.4% vs. 7.0% (5K) vs. 5.8% (1K), $P = 0.0001$), with similar usage of ultrasound/lithoclast/lift out. Sub-analysis of 4490 cases showed 25.8% of cases used multiple stone fragmentation modalities. Nephrostomy tube usage postoperatively is significantly reduced (72.6% vs. 75.6% (5K), $P = 0.0001$). Intraoperatively 78.5% of patients were recorded as stone-free, which was confirmed in 69.1% on postoperative imaging, similar to previous analyses. Complication rates are shown in Table I.

Conclusions: PCNL practices continue to evolve in the UK. Continued contribution of data and subsequent careful analysis of the registry allows us a better understanding of PCNL in the UK.

Conflicting interests

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Table I.

	1K analysis		5K analysis		9K analysis		Chi square test
	N	%	N	%	N	%	
Visceral injury	4	0.3	17	0.3	22	0.2	NS
Transfusion	24	2.5	117	2.4	199	2.2	NS
Postop fever	155	16	551	12.1	916	10.7	$P = 0.02$
Sepsis	25	2.4	128	2.8	215	2.5	NS
Clavien 3–5	17	1.4	84	1.6	229	2.4	$P = 0.002$

2. How can we measure successful outcome for PCNL? Further planned treatment versus traditional measurements of stone-free rate: Analysis of a national registry

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Introduction and objective: There is heterogeneous methodology for recording stone-free rate (SFR) within a national registry. Intraoperatively, can 'further planned stone treatment' be used as a surrogate marker of SFR and treatment success?

Methods: A total of 9084 cases from the BAUS percutaneous nephrolithotomy (PCNL) registry record SFR intraoperatively and were analysed for SFR records postop day one and at three months follow-up. SFR records were compared with intention for 'further planned stone treatment'. Subgroup analysis was performed for variation with stone size and stone complexity measured by the Guy's stone score (GSS).

Results: Of the 9084 cases recording intraoperative SFR, 78.4% had records for SFR on postop day one, 37.3% at three months follow-up and 60.6% recorded intention for 'further planned stone treatment' intraoperatively. X-ray kidney, ureter and bladder (KUB) was the most frequent imaging modality used (67.9%), then computed tomography and ultrasound (16.1% and 6.1%, respectively). Using intention for 'further planned stone treatment' as a marker of success compared to complete clearance on fluoroscopy intraoperatively had a sensitivity of 92.7% (95% confidence interval (CI) 91.81–93.53) and specificity of 72.6% (95% CI 70.48–74.67). When compared to clearance on postop day 1 imaging the sensitivity was 97.6% (95% CI 96.91–98.23) and specificity 63.08% (95% CI 61.02–65.10). Subgroup analysis of stone diameter and GSS revealed no statistically significant differences.

Conclusions: Using intention for 'further planned stone treatment' does show correlation with reported SFR intraoperatively and postop day one. Accurate recording of SFR to measure treatment success within a national registry requires enhanced submission of follow-up data and a consistent approach to the timing and imaging modality used.

Conflicting interests

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3. 10-Year single centre experience of supine PCNL: Patients, stones and outcomes

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Introduction: Supine percutaneous nephrolithotomy (sPCNL) offers advantages, in terms of ease of positioning, operative time and anaesthetic safety, without compromising stone clearance. We report our experience of sPCNL over 10 years.

Patients and Methods: All sPCNLs performed at our hospital from February 2007 to June 2017 were recorded prospectively. Demographics, stone information (size, number, position and Guy's stone score), and comorbidity were entered, followed by operative detail, stone clearance following computed tomography of kidney, ureter and bladder (CTKUB) (< 3 months) and complications (Clavien–Dindo).

Results: A total of 420 sPCNL procedures were recorded from 2007 to 2017, including 261 (62%) male and 159 (38%) female patients, of median age 54 years (18–90) and median body mass index 28 (18–70).

Median operative time was 70 minutes (25–240). Seventy-two staghorns were treated (58 complete, 14 partial). Median stone diameter was 16 mm (6–54). Puncture sites were lower pole in 248 (59%), interpolar in 100 (24%), upper pole in 54 (13%) and multiple in 17 (4%) procedures. Eighty-nine (21%) procedures incorporated simultaneous ureteroscopy for ureteric stones or renal stone manipulation.

A total of 282 (67%) were totally stone free. A further 79 (19%) had residual fragments less than 2 mm. 12 (3%) cases had failed access.

Twenty-eight Clavien grade II, 11 grade IIIa, 11 grade IIIb and two grade IVa were recorded. These included five (1%) pseudoaneurysms requiring embolisation, 25 (6%) urinary tract infections/sepsis and eight (2%) transfusions. One pneumothorax was recorded, requiring emergency chest drain. One bowel injury was recorded, requiring primary repair. Median length of stay was three (1–16) days.

Conclusions: Supine PCNL can be adopted as the standard approach in all patients and all stones. From this large series of sPCNL, we demonstrate favourable stone-free rates, with serious but rare complications.

Conflicting interests

The authors declare that there is no conflict of interest.

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4. Percutaneous surgery in children: Nine years' experience from a single UK centre

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Introduction: Stone disease in the paediatric population in the UK is rare and is managed in a few centres. We run a service with a paediatric surgeon and an adult stone surgeon, offering all modalities of treatment from a joint clinic. We have reviewed nine years of percutaneous surgery in this paediatric population.

Objectives: To evaluate the outcomes of percutaneous nephrolithotomy (PCNL) in the management of renal stones in children in our centre over a 9-year period.

Methods: All patients under 16 years who underwent a PCNL at our institution between 2008 and 2017 were retrospectively reviewed. We collected demographic information, comorbidities and surgical details; stone complexity and follow-up information to identify complications were also recorded.

Results: PCNL was performed by one surgeon, performing 30 procedures in 28 patients. The mean age was 7.3 years (range 11 months to 16 years). The mean stone diameter was 19.2 mm. The Guy's stone score (GSS) was as follows: GSS 1, 3; GSS 2, 9; GSS 3, 3; GSS 4, 13. The minor complication rate (Clavien–Dindo 1–2) was 10.3%, and the major complication rate (Clavien–Dindo 3–4) occurred in 10.3%. No patients required a blood transfusion.

Conclusions: PCNL is a safe procedure even in the extremely young. We believe the combined clinic with a paediatric urologist and adult stone surgeon allows modern approaches to stone disease to be offered to the very young.

Conflicting interests

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5. Can a virtual stone clinic improve patient care at a reduced cost?

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Introduction: Constantly increasing patient numbers has created severe pressure on outpatient clinics. New patient care pathways are needed that can reduce those pressures and improve patient overall care. We set up a weekly virtual stone clinic (VSC) whose aim was to ensure that all stone patients were reviewed by the stone team

and triaged to the appropriate stream. All stone referrals were captured by the stone coordinator and reviewed in the VSC by the stone consultant(s), SpR, stone nurse and research nurse.

Aim and Methods: We aimed to assess the effectiveness of our VSC in saving outpatient appointments, diverting consultant clinic appointments to nurse-led consultations (in person or by telephone) and expediting patient care pathways to meet treatment target pressures. Data were collected prospectively for 5 months from 12 December 2016 to 17 May 2017.

Results: The VSC reviewed 300 clinic appointment requests. Of those, 65 appointments were avoided completely, 45 were changed to telephone appointments and 127 to specialist nurse appointments. In addition, 178 patients were referred for opinion. In 24 the management decision was altered, avoiding last minute cancellations after re-discussion with the patients. Clinic appointments were expedited in 17 cases for clinical reasons and six patients were admitted for urgent intervention.

Conclusion: We found that utilising a 90-minute VSC every week has significantly reduced outpatient clinic pressures, expedited patient care in appropriate cases and prevented last minute changes to procedures or cancellations. Overall, it improved patient management while saving significant resources in terms of time and money.

Conflicting interests

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6. Quality of life and satisfaction in a virtual stone clinic: A pilot study

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Introduction: Virtual clinics have been used in several specialties in order to decrease face to face (FTF) clinic appointments, saving patient and clinician time. We sought to assess recurrent stone clinic attenders' quality of life (QOL) and satisfaction with being followed up in a novel virtual stone clinic as well as financial implications.

Methods: A symptom questionnaire and two validated QOL questionnaires (EQ-5D, general QOL) and (WIS-QOL, stone-specific QOL) were posted to all patients due an annual stone follow-up. They were given a 2-week window to attend for X-ray kidney, ureter and bladder (KUB). Subsequently they received a letter from the consultant urologist following review of symptom scores and imaging.

Results: The initial 46 patients were included in this pilot. Eighty-five per cent of patients found the flexibility of X-ray KUB timing as very or extremely helpful and 59% were able to avoid time off work. Ninety-six per cent of patients would be happy to have ongoing follow-up using this clinic format. Costing analysis showed a decrease in direct costs per patient to £7.92 versus £24.74 in the FTF clinic. WIS-QOL scores varied significantly between symptomatic and non-symptomatic patients (79.2 vs. 87.6, $P = 0.03$, t -test) while the EQ-5D failed to differentiate between groups (0.80 vs. 83.8, $P = 0.13$, t -test).

Conclusions: The virtual clinic provides time and financial benefits and is widely acceptable to patients. In this cohort the WIS-QOL, a relatively new stone-specific QOL questionnaire is able to detect patient perspectives in symptomatic versus non-symptomatic patients whereas the generic EQ-5D tool cannot.

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7. A UK snapshot of one year outcome of patients presenting with acute loin pain in June 2015

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Objective: We followed a cohort of patients who presented in June 2015 to provide a 'snapshot' of UK practice for the management of patients with acute loin pain.

Methods: A total of 827 patients had an emergency computed tomography of kidney, ureter and bladder (CTKUB) across 10 UK hospitals in June 2015, of whom 408 (49.3%) had urolithiasis confirmed. Their records were analysed at six weeks, six months and one year to provide insight into their status over the year following their acute presentation.

Results: A total of 62.9% of the patients with urolithiasis had ureteric colic (42.6% in the distal ureter and 16.7%

in the proximal ureter). 25.9% ($n = 106$) had renal stones only. Eighty-four per cent were managed conservatively: 56.8% were not admitted, and of those that were, 57.7% did not require active intervention. The use of MET was already in decline, with just 31% prescribed it. Patients who required acute intervention had larger stones than those not admitted (median 7.7 mm, mean 9.5 mm vs. median 4 mm, mean 4.5 mm). Stone size also predicted the likelihood of early re-presentation ranging from 4.1% for stones 1–4 mm to 15.3% for stones 7–10 mm during the first 6 weeks post-presentation.

Discussion/Conclusion: This study has shown that patients with larger stones were more likely to be admitted, require intervention (especially emergency drainage), re-present to emergency services and take longer to be stone and tube free than patients with smaller stones. The definitive management of patients with larger stones (i.e. > 7 mm) should therefore be planned as soon as feasible to reduce patient uncertainty and tube-related morbidity.

Conflicting interests

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8. The influence of dietary supplementation with cranberry tablets on urinary risk factors for nephrolithiasis

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Introduction: Cranberry supplements are commonly used as a natural deterrent to urinary tract infection. However, one small study (Terris et al., *Urology* 2001) found an increase in urinary oxalate levels following cranberry supplementation. This has led to its use with caution in patients susceptible to nephrolithiasis. Furthermore, most commonly available cranberry tablet preparations contain vitamin C, which has been independently shown to increase urinary oxalate excretion.

The aim of this study is to investigate the influence of cranberry supplementation on urinary oxalate levels.

Methods: Fourteen healthy volunteers (eight men, six women) were randomly assigned to receive cranberry tablets alone or cranberry tablets containing vitamin C. Tablets were taken at the manufacturers' recommended dosage for a period of 14 days. Participants provided a 24 hour urine

collection at trial entry and day 14. Urinary variables were compared to assess for changes in oxalate levels.

Results: The mean age was 27 years (21–43). There was no difference in the 24 hr urine volume pre- or post-commencement of cranberry tablets (2.17 L \pm 1.24 L vs. 2.57 L \pm 1.43 L). An increase in urinary oxalate levels compared to baseline values was observed both in those taking cranberry-only tablets (mean increase 143.2 \pm 160.3 μ mol/24 hr) and those taking cranberry tablets containing vitamin C (mean increase 226.78 \pm 242.6 μ mol/24 hr). The type of cranberry preparation did not significantly impact the degree of oxalate excretion observed ($P = 0.45$).

Conclusion: Cranberry tablets increase urinary oxalate excretion. Patients should be counselled regarding the potential nephrolithic effects of taking these supplements, particularly those with a propensity towards kidney stone formation.

Conflicting interests

The authors declare that there is no conflict of interest.

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10. Single centre experience with Allium and Uventa covered ureteric stents for the management of ureteric strictures and injuries

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Aims: To describe our first 12-month experience of using covered ureteric stents for managing ureteric strictures and leak.

Methods: Covered, self-expanding, large calibre ureteric stents (Allium and Uventa) were introduced in September 2015 and scrutinised with prospective audit to assess efficacy and outcome. Insertion was performed after balloon dilatation, if necessary. Follow-up included routine biochemistry, radiological imaging and clinical review. Median follow-up was seven months.

Results: Twenty-one patients had 26 stents inserted. Twenty-four stents were placed retrogradely while two were placed antegradely, all with interventional radiology. Fourteen ureters had benign disease and 12 malignancy; eight patients had postoperative ureteric injuries. All five ureteric leaks were successfully treated without the need for nephrostomy. Twenty renal units had previous JJ stents that failed, of which 18 were salvaged.

Two patients obstructed with covered stents in-situ due to ureteric reaction just distal to the stent. The stent itself remained patent in all cases. Two stents migrated requiring re-intervention. Ten cases were performed as emergencies and the median length of stay for elective cases was one day. The complication rate was minimal, with one 30-day Clavien II (sepsis).

Conclusion: To the best of our knowledge very few UK centres utilise these novel covered metal stents. They provide good renal tract drainage and are a useful addition to the armamentarium for the endo-urological management of complex ureteric pathologies. Reduced nephrostomy and stent symptoms/changes improve quality of life. Long-term follow-up data and cost-benefit analysis is clearly required.

Conflicting interests

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Poster abstracts

1. Establishing the renal stone patient-reported outcome measures reliability

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Introduction and objective: Surgeon-reported outcomes have been the main measures in reporting surgical results. An emerging paradigm to assess patients' experience from the qualitative aspect has increased the interest in patient-reported outcome measures (PROMs). The primary stages of generating and selecting items for our renal stone disease-specific PROM via focus groups and semi-structured interviews were presented previously. Our aim is establishing the test-retest reliability and internal consistency of the developed renal stone disease-specific PROM.

Methods: In a pilot study, patients with radiologically confirmed renal calculi presenting to our stone clinic were invited to participate in test-retest of our developed renal stone disease-specific PROM along with demographic and clinical data.

Results: Analysis was performed to determine internal consistency within domains using Cronbach's alpha with a mean of 0.91 (range 0.89–0.93) and Cronbach's

alpha between domains was 0.93. Average inter-item Pearson's and Spearman's correlation within domains was performed, with Pearson's correlation mean of 0.78 (range 0.73–0.86) and Spearman's correlation mean of 0.73 (range 0.66–0.76). Test–retest Pearson's correlation mean was 0.84 (range 0.51–0.95). Bland–Altman analysis was conducted for all domains, the overall mean of differences is 0.10 and 95% limits of agreement were between –1.05 and 1.25.

Conclusions: After excluding redundant questions, test–retest reliability, internal consistency within domains and average inter-item correlation within domains were high. We will now evaluate renal calculi therapy prospectively using our renal stone disease-specific PROM, in addition to establishing the construct validity together with the EQ-5D-5L and criterion validity.

Conflicting interests

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2. Laparoscopic retroperitoneal lymph node dissection in postchemotherapy non-seminomatous germ-cell tumours

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Objectives: Post-chemotherapy retroperitoneal lymph node dissection (RPLND) in patients with metastatic non-seminomatous germ cell tumours with residual lymph nodes offers a staging benefit and a therapeutic benefit for excision of chemoresistant tumours (e.g. teratoma, sarcoma). Traditionally RPLND is performed through an open approach. We aim to assess the feasibility and complications of laparoscopic RPLND.

Patients and Methods: A retrospective review of the medical records of 29 consecutive patients who underwent postchemotherapy laparoscopic RPLND by a single surgeon from April 2013 to January 2017 was performed. Operative details, postoperative morbidity and histological findings were assessed.

Results: The mean size of residual disease in the retroperitoneum in preoperative scans was 2.6 cm (range 0.8–6.2 cm). The surgical technique consisted of a transperitoneal laparoscopic excision of a unilateral modified template (left

template in 17, right in 12 patients). There was one conversion due to failure to progress. Mean operative time was 160 minutes (range 90–240 minutes). Mean postoperative drop in haemoglobin was 1.1 g/dL. Postoperative complications were lymphocele in two patients managed conservatively and one postoperative pyrexia. Mean hospital stay was 1.5 days (range 1–3 days). Histology showed mature teratoma in 16 patients (55%), active tumour in five (17%) and necrosis or fibrosis in eight patients (28%). The mean number of lymph nodes removed was nine (range 1–20). During a mean follow-up of 23 months one patient with undifferentiated teratoma had recurrence.

Conclusions: Laparoscopic RPLND is a feasible and effective procedure in experienced hands. Further studies are needed to clarify oncological outcomes precisely.

Conflicting interests

The authors declare that there is no conflict of interest.

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3. Effect of perioperative epidural insertion on disease recurrence following renal cancer surgery

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Introduction: Surgery facilitates cancer progression via the immunosuppressive effects of the surgical stress response, dispersion of micro-metastases, and vascular endothelial growth factor-mediated angiogenesis.

Table 1.

	Epidural group	Non-epidural group
Number of patients	193	278
Mean age	66	65
Male sex (% of total)	63.50%	61.10%
Number of patients receiving blood transfusions (% of total)	2 (1%)	8 (2.9%)
Number of open procedures (%)	7 (3.9%)	6 (2.1%)
Mode stage of cancer	IA	IA
Median stage of cancer	IB	IB
Mean length of follow-up (months)	32.8	37.8

Table 2.

	No. of recurrences	Total patients in this group	% Recurrence
Recurrence at one year			
Epidural	25	166	15%
Non-epidural	46	242	19%
New recurrence at two years			
Epidural	11	128	9%
Non-epidural	12	193	6.20%
New recurrence at five years			
Epidural	8	57	14%
Non-epidural	18	111	16%
Total new recurrence			
Epidural	44	193	23%
Non-epidural	76	278	27.30%
Mean time to recurrence (months)			
Epidural	12.8		
Non-epidural	17.1		

Regional anaesthesia inhibits this surgical stress response, reduces pain and has a direct anti-cancer effect.

The aim of this study is to ascertain whether there is any difference in cancer recurrence rates in patients undergoing radical nephrectomy for renal cell carcinoma receiving epidural analgesia plus a general anaesthetic, compared to general anaesthesia alone.

Method: We prospectively collected single surgeon/single centre data over 12 years, and divided patients into two groups; those with a perioperative epidural, and those without. We compare time to radiologically detected recurrence during standard follow-up. We consider surgical tumour characteristics and blood transfusion rates to identify any significant confounders.

Results: We included 471 patients; 193 in the epidural group and 278 in the non-epidural group. Demographics are shown in Table 1, recurrence rates are shown in Table 2. There were 44 cases of recurrence in the epidural group (23%); versus 76 cases of recurrence in the non-epidural group (27.3%); sub-hazard ratio (SHR) of 0.53 (95% confidence interval (CI) 0.24–1.09, $P = 0.08$). Mean time to recurrence was 12.8 months in the epidural group, versus 17.1 months in the non-epidural group. SHR for blood transfusion was 0.82 (95% CI 0.18–3.7).

Discussion: There is a reduced cancer recurrence rate in the epidural group, SHR 0.53, that approaches significance. We believe epidural anaesthesia may be protective against renal cancer recurrence; however, larger, national datasets are needed to support this work.

Conflicting interests

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4. Is limited non-contrast pelvic CT indicated for asymptomatic patients with small distal ureteric calculi?

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Introduction: Our objective was to investigate whether patients with small asymptomatic distal

ureteric calculi require follow-up imaging to confirm stone passage.

Patients and Methods: Patients were identified from a prospective database of all new cases of urolithiasis presenting in a UK teaching hospital over an 18-month period from January 2015 to June 2016. Those who had a computed tomography (CT) scan confirmed calculus in the distal ureter of 5 mm or less were included.

Results: A total of 914 cases were added to our database over the study period, of which 192 patients met study inclusion criteria; 167 patients were managed conservatively; 138 attended for follow-up over a mean time period of 5.38 weeks (standard deviation (SD) 3.46). At follow-up, 107 patients had no evidence of stone passage; 20 were symptomatic and a majority of 18 had a follow-up CT. Persistent calculus was demonstrated in three. The remaining two patients had radiographs; neither showed a calculus.

Eighty-seven patients were asymptomatic at follow-up, of which 53 underwent a limited non-contrast pelvic CT. Four (7.5%) had not passed the calculus. The mean time between initial and follow-up CT was 10.66 weeks (SD 7.35). Twenty-five cases had no further imaging, none have re-presented. Of the remaining patients six had ultrasound and three had radiograph follow-up. Persistent calculus was seen on one radiograph.

Conclusion: Despite study limitations the detection rate of 7.5% is important when considering follow-up in asymptomatic patients with small distal ureteric calculi. The drawbacks of repeated imaging need to be weighed against the risks of undetected calculi.

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Table 3.

Available for analysis (n = 338)			Nephrectomy				Partial nephrectomy	Mean age (P = 0.02)
			Radical	Simple	Nephroureterectomy	Donor		
No previous surgery (n = 241)			132	5	7	44	53	56
Previous Surgery (n = 97)	Upper abdominal surgery (n = 75)	Abdominal laparoscopy	9	1	–	1	7	62
		Laparotomy	34	–	4	4	13	
		Surgery to ipsilateral kidney	2	–	–	–	–	
	Lower abdominal surgery (n = 22)	Open/laparoscopic pelvic surgery	11	–	1	3	7	

5. Impact of previous abdominal surgery on laparoscopic transperitoneal partial and radical nephrectomy

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Introduction: Previous abdominal surgery is thought to increase the risk of complications in subsequent laparoscopic procedures. We examined the technical feasibility and immediate outcomes of laparoscopic nephrectomy in such patients, investigating whether surgical history is an added risk factor.

Patients and Methods: A total of 408 patients underwent laparoscopic nephrectomy at our institution by a single surgeon (June 2013 to April 2017). Patients with a previous surgical history (group A) were compared to those without (group B). Procedure duration, estimated blood loss (EBL), warm ischaemia time, perioperative complications and length of stay (LOS) were compared. Further subgroup analysis examined the impact of previous upper or lower abdominal surgery. Data were retrieved from a prospectively maintained database.

Results: There was no significant difference in procedure time, ischaemia time, EBL, transfusion or complication rates between groups. Open conversion rates were similar: 2.1% versus 2.5% ($P = 0.8$).

Although the Clavien–Dindo severity of complications was similar between groups ($P = 0.9$), group A had longer overall LOS (mean 3.6 vs. 2.8 days, $P=0.02$).

Conclusion: In our group, previous surgery did not significantly increase the perioperative risks of laparoscopic nephrectomy. The marginally longer LOS noted is to be expected in an older patient group, with known previous comorbidities.

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6. Does laparoscopic live donor nephrectomy lead to better perioperative outcomes than pathological nephrectomy in patients younger than 40 years?

G Munbauhal, F Khan and J Cartledge

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Introduction: We reviewed the impact of surgical indication for laparoscopic nephrectomy in a young population, on the perioperative course to investigate whether donor nephrectomy patients fare differently from their pathological counterparts.

Patients and Methods: A total of 110 patients (< 40 years) underwent laparoscopic nephrectomy between June 2009 and April 2017 at our institution by a single surgeon. Data were retrieved from a prospectively maintained database.

Length of procedure, estimated blood loss (EBL), perioperative complications and length of stay (LOS) were compared between the donor group and non-donor group.

Results: There were no significant differences in the immediate perioperative outcomes between groups. The overall intraoperative complication rate was 3.8%, with three open conversions (including one donor) and one case requiring transfusion. EBL greater than 500 ml was seen in 2.6% and 4.5% of donor and non-donor cases, respectively ($P = 0.6$), and 13.5% cases developed a postoperative complication, with either group having one patient with a Clavien–Dindo score of 3 or greater.

However, LOS was longer in donor cases (median three vs. two days, $P = 0.004$) with 66% staying longer than two days compared to 32% for pathological cases ($P = 0.01$).

Conclusion: In our experience, undergoing donor nephrectomy does not mitigate the perioperative course. The longer postoperative stay we noted may stem from the healthy patient's expectation of returning to a high normal baseline prior to discharge. Further data are needed on the short- and medium-term recovery.

Conflicting interests

The authors declare that there is no conflict of interest.

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7. Which stone formers should we screen for distal renal tubular acidosis?

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Patients with distal renal tubular acidosis (dRTA) are at a high risk of brushite kidney stone formation and recurrence because of increased calcium phosphate tubular excretion, reduced citrate excretion and increased urinary pH. Previous studies have shown a high prevalence of dRTA among hypercalciuric stone formers. The aim of this study was to compare the biochemistry of hypercalciuric stone formers with and without dRTA to assess if there are any suitable baseline screening indicators that may predict patients with dRTA.

Patients with recurrent urolithiasis and hypercalciuria were reviewed in a metabolic stone clinic. Baseline serum and 24-hour urine biochemistry were recorded. All patients underwent a furosemide acidification test. Patients were then split into two cohorts: dRTA (failure to acidify urine pH <5.5) and non-dRTA. Baseline biochemical parameters

Table 4. Results

Available for analysis ($n = 104$)					
	Nephrectomy		Median age (range) ($P = 0.5$)	Gender (female) ($P = 0.9$)	Laterality (left) ($P = 0.1$)
Non-pathological	Donor	38	33 (19–39)	58%	79%
Pathological	Radical	48	31 (16–39)	56%	64%
	Simple	4			
	Nephroureterectomy	2			
	Partial	12			

were compared between the two groups using the Mann–Whitney U test.

Of a total of 43 patients, 84% were men, average age was 58 years. Nine patients (21%) had dRTA based on the furosemide acidification test. Urine pH was higher in the dRTA group (6.6 vs. 5.7, $P = 0.005$) and serum bicarbonate was lower (23.4 mM vs. 25.9 mM, $P = 0.0001$). Otherwise, there was no significant difference in baseline biochemistry. As expected, patients with dRTA had a higher baseline urinary pH and lower serum bicarbonate. However, we have found no evidence that any additional urine or serum biochemical markers would be useful indicators to prompt dRTA testing. We therefore suggest testing for dRTA in all hypercalciuric patients with recurrent urolithiasis, or calcium phosphate stones, in order to optimise further biochemical management.

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8. Are patient information days useful for patients with cystinuria?: A patients' perspective

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Introduction: As it is a rare disease, patients with cystinuria have little opportunity to meet other patients affected by the disease. The key to ensuring self-management is empowerment through information and education. Websites and social media groups are some of the ways of disseminating this information. Patient information days offer the opportunity for patients and family members to meet each other, share stories and management strategies while also meeting healthcare professionals.

Method: We organised a national free to attend patient support day with the National Registry of Rare Kidney Diseases (RaDaR) group, allowing patients and their families to network and gain knowledge and advice about their condition. Interactive lectures were given on surgical, nephrological, research and dietetic topics. Selected patients shared their stories with the group. Small breakout sessions allowed interaction and sharing of information. Patients were given feedback questionnaires to collect data objectively.

Results: Sixty-four people attended the day. Twenty-three patients (men 11, women 12) with their families

completed the survey. A broad range of ages (18–70 years) was represented; 50% of attendees (11) had attended a similar event in the past. The majority (78%) of patients felt the day met their expectations and 96% would recommend the event to others. Apart from the usefulness of the update sessions, patients found listening to other patient stories useful (96%) and enjoyable (83%).

Conclusion: Patient information days are useful and a valuable source of information and networking opportunities. Future days will include more patient stories and dietary advice based on the feedback obtained.

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9. Use of local anaesthetic infusion systems following laparoscopic nephrectomy and laparoscopic nephroureterectomy

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Introduction and objectives: The side effects of morphine may prolong postoperative recovery and length of hospital stay (LOS). Local anaesthetic wound infusion systems (LAISs) reduce LOS and pain after open surgery. A literature search shows no evidence of LAIS use following laparoscopic surgery. We assessed LAIS use in patients after laparoscopic nephrectomy (LN) and laparoscopic nephroureterectomy (LNU) compared with morphine via patient controlled analgesia (PCA).

Methods: A retrospective series of LN or LNU patients from 2014 to 2017 were divided into two groups: LAIS (ON-Q* pain relief system) with continuous infusion of 0.125% bupivacaine versus PCA postoperatively. Both groups used paracetamol, and additional analgesia (morphine, tramadol, codeine) postoperatively. All PCAs and LAISs were removed day 1 postoperatively. Primary outcomes were postoperative opiate analgesia used (morphine, tramadol, codeine) and LOS. The Mann–Whitney U test was used for statistical analysis.

Results: Thirty-two patients underwent LN or LNU; 16 with LAIS versus 16 with PCA postoperatively. Patient demographics were similar between groups, median age ($P = 0.465$), body mass index ($P = 0.250$) and comorbidities ($P = 0.928$). No statistical difference in

intra-operative opiate use ($P = 0.112$) and postoperative weak opiate (tramadol, codeine) requirements ($P = 0.459$) were found.

Median morphine per 24 hours was 26.7 mg and 3.3 mg in the PCA and LAIS groups, respectively. This was statistically significant ($P = 0.00014$). LOS in the PCA versus LAIS group was significantly different (median LOS 2.5 vs. 1 day) ($P = 0.00634$).

Conclusions: There was a significant reduction in postoperative morphine and LOS following LN or LNU with PCA versus LAIS use. LAIS should be considered a first-line treatment after laparoscopic surgery as patients do not require in-hospital monitoring, therefore expediting discharge from hospital.

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10. A regional survey of string use when stenting following uncomplicated completed ureteroscopy

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Introduction: Ureteric stenting is a common procedure in urology. Current literature suggests that the preconceived idea that stenting with the string in situ causes more patient discomfort and increases the risk of infection are actually unfounded. We believe leaving the string in situ reduces dwell time and costs associated with removal. Our aim was to elicit what proportion of urologists are leaving the string in situ and if they are not, then exploring the reasons behind it.

Methods: We used nine questions by means of SurveyMonkey to document current practice following completed uncomplicated ureteroscopic procedures. We sent this to all consultant urologists in the South West region.

Results: We received 26 responses from eight centres, 50% of which are stone specialists. Forty-two per cent never use the string while the remainder do so in a proportion of cases (median 80%). Determining factors include: patient gender (10%), patient symptoms (5%) and patient preference (29%). Removing the string increases planned dwell time from a median of 3–7 days to a median of 14 days. The reasons given for not leaving the string in situ are fear of stent dislodgement (47%), patient reluctance (21%) and no prior experience (37%). Only 40% were aware of the literature.

Conclusion: A significant proportion of South West urologists are not utilising the stent strings following uncomplicated completed ureteroscopy and are unaware of the literature. We aim to educate and encourage the use of strings.

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11. An update of stone analysis in the United Kingdom and Republic of Ireland

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Introduction and objective: It is well known that renal stone disease is a recurrent condition, with up to 50% of patients having repeated episodes within 5–10 years. International guidelines suggest performing stone analysis for the comprehensive evaluation of patients with urinary tract calculi and it plays a very important role in the long-term management of this condition.

Methods: We retrospectively reviewed all the urinary tract calculi submitted to the Department of Chemical Pathology and Metabolic Diseases at the University Hospitals of Leicester, UK, over a 5-year period between 2010 and 2015. Samples were received from England, Scotland, Wales, Northern Ireland and the Republic of Ireland. All specimens were analysed using state-of-the-art infrared spectroscopy for major, minor and trace components.

Results: A total of 5753 specimens were received, of which 5533 (96.2%) were from adults and 220 (3.8%) were from paediatric patients.

In paediatric patients, there were 143 boys and 77 girls (M:F = 1.9:1) with a median age of 9 years (0–17 years). The most prevalent stones were calcium phosphate stones (38.6%), followed by calcium oxalate (32.7%), struvite (12.3%), cystine (7.3%), urate (3.2%) and small numbers of other compositions such as cholesterol stones.

In the adult cohort, there were 3873 male and 1660 female specimens (M:F = 2.3:1) with a median age of 56 years (18–97). Calcium oxalate stones were the most prevalent (62.1%), followed by calcium phosphate (19.8%),

urate (10.1%), struvite (4.3%) and cystine (0.9%). Small quantities of rarer stones were also identified such as cholesterol, sulphate, xanthine and quartz stones (0.23%).

Discussion: This is the largest paediatric stone analysis database in Europe. Calcium oxalate crystals appear to be the most prevalent stones (ranging from 36% to 78%) in the majority of the published literature from USA, Europe and Africa. It is interesting to note that in our study the most prevalent crystal was calcium phosphate. It is unclear if this is due to consumed local water content or variations in dietary and lifestyle choices.

This is also the largest adult stone analysis database in the UK and one of the largest in Europe. The most prevalent major stone composition in our study was

calcium oxalate, and compared to other published literature our prevalence is comparable (45–81% in these studies).

This study provides valuable contemporary insight into the most common major composition of urinary tract calculi in our local population and can help to address risk factors accordingly.

Conflicting interests

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