Results: In all, 75 patients with penile fracture, with a mean range age of 31.5 (25–36) years were evaluated. Sexual intercourse was the common mechanism of injury in most of the patients. In 12 patients there was associated urethral injury. All the patients were diagnosed after taking a full history and clinical examination. All patients underwent emergency surgical exploration. All the patients had ≥1 year of follow-up, and were evaluated with local examination, uroflowmetry and colour Doppler ultrasonography.

Conclusion: Penile fracture is associated with urethral injury, especially in the presence of a suggestive history and physical examination, e.g. acute urinary retention and bleeding per urethra. Immediate primary surgical management of both the penile fracture and urethral injury is a safe and effective option with minimal complications.

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[57] Bacteriological analysis of urinary stones: correlation with preoperative cytobacteriological examination of urine

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Objective: To analyse the bacteriological correlation between preoperative cytobacteriological examination of urine (CBEU) and urinary calculi, and to evaluate the impact of chemical nature on the bacteriological stones.

Methods: This was a prospective single-centre study including 42 patients who underwent urolithiasis surgery between January and April 2018. Bacteriological culture of the removed stones was systematic. Mean comparisons were made by the Pearson chi-square test and Fisher’s test for qualitative variables, with statistical significance set at $P < 0.05$.

Results: The average age of our series was 56 years, with a male predominance of 83.3%. Bladder opening was performed in 45.2% of our patients. The rate of urinary colonisation was 33.3% (14/42). The rate of infected stones was 35.7%. Of the identified pathogens, Escherichia coli was found in 40% of the infected stones, followed by Enterococcus faecalis (20%), and Staphylococcus coagulase negative and Pseudomonas aeruginosa (13.3%). There was a significant correlation ($P < 0.001$) between preoperative CBEU and bacteriological analysis of the stones. The infected stones were principally calcium oxalate monohydrate and struvite ($P = 0.03$, $P = 0.01$).

Conclusion: There is a significant correlation between the bacteriological culture of urinary stones and preoperative CBEU results. A negative preoperative CBEU can guarantee the sterility of urinary calculi in 89.2% for avoiding postoperative infectious complications after surgical manipulation of these stones.

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[58] The effect of β-caryophyllene on renal dysfunction following ischaemia–reperfusion injury

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Objective: To investigate the effect of β-caryophyllene (BCP) on renal ischaemia–reperfusion injury (IRI)-induced renal dysfunction, as IRI causes renal functional alterations that might lead to permanent renal impairment and BCP (a natural bicyclic sesquiterpene and constituent of many essential oils and spices) has been shown to exhibit anti-inflammatory, antioxidant, antispasmodic and chemopreventive activities in several organs. BCP is a USA Food and Drug Administration (FDA)-approved food additive and its effect on IRI has not been investigated.

Methods: Wistar rats underwent left renal warm ischaemia for 40 min. The G-BCP group (n = 13) received oral BCP (50 mg/kg/day) dissolved in a vehicle starting 7 days before IRI and continued 7 days thereafter when the renal functions of both kidneys and the tissue level of some oxidative stress markers and pro-inflammatory cytokines were measured. The G-Vx group (n = 13) underwent the same protocol but received vehicle only.

Results: IRI effected haemodynamic (renal blood flow and glomerular filtration rate) and tubular (urine volume, total and fractional urinary sodium excretion) parameters in the left ischaemic kidney in the G-Vx group. BCP did not affect any of these alterations in the ischaemic kidney (all $P > 0.05$). However, it attenuated the alterations in malondialdehyde (MDA) and glutathione (GSH) in the left ischaemic kidney in the G-BCP group compared to the G-Vx group, at a mean (SD) MDA level of 9.3 (2.1) vs 4.8 (1.0) μmol/L ($P = 0.047$) and GSH level of 18.1 (2.5) vs 13.6 (1.7) mmol/L ($P = 0.09$).

Conclusion: BCP appears to have no significant protective effect on the haemodynamic and tubular
glomerular functions when measured 7 days after IRI, despite the attenuation in the alterations in some of the oxidative stress markers indicating a weak renoprotective effect of BCP in this condition.

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[59] The effect of Alda-1, aldehyde dehydrogenase-2 agonist, on the renal functions following ischaemia–reperfusion injury

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Objective: To investigate the effect Alda-1, aldehyde dehydrogenase-2 (ALDH2) agonist, on renal functions following ischaemia–reperfusion (IRI) injury. IRI induces the production of aldehydes, which are detoxified by aldehyde dehydrogenases (ALDHs). Alda-1 is a selective ALDH2 agonist and its protective effect has been demonstrated in several conditions; however, the effect of Alda-1 on the kidney or on renal IRI has not been investigated.

Methods: We investigated the effect of Alda-1 on renal dysfunction following IRI. Wistar rats underwent left IRI for 40 min. Group-Alda (n = 11) received Alda-1 starting 24 h before IRI and continued for 7 days and then renal functions were measured. Group-Vx (n = 11) underwent the same protocol but received only the dissolvent.

Results: Alda-1 did not affect renal blood flow or glomerular filtration rate in the left ischaemic kidney in Group-Alda compared to the Group-Vx [mean (SD) 3.05 (0.50) vs 3.53 (0.70) mL/min, and 0.40 (0.06) vs 0.51 (0.08) mL/min/1.73 m², respectively; both P > 0.05]. However, left renal fractional sodium excretion was significantly worse in Group-Alda [mean (SD) 2.80 (0.43) vs 1.37 (0.36)%; P = 0.02]. Alda-1 also adversely affected the gene expressions of kidney injury molecule-1 (KIM-1) and neutrophil gelatinase-associated lipocalin (NGAL) [mean (SD) 217 (38) vs 99 (13) and 49 (13) vs 20 (5), respectively; both P < 0.05] and the alterations in tumour necrosis factor α (TNF-α), transforming growth factor β1 (TGF-β1), plasminogen activator inhibitor 1 (PAI-1), fibronectin 1 (Fn1) and p53 [mean (SD) 4.4 (0.9) vs 2.1 (0.3), 1.5 (0.1) vs 1.1 (0.1), 30.0 (2.7) vs 11.7 (2.3), 3.6 (0.4) vs 2.1 (0.2) and 1.3 (0.1) vs 0.9 (0.07), respectively; all P ≤ 0.05]. This was associated with intratubular crystal deposition suggestive of crystalline nephropathy.

Conclusion: Alda-1 exacerbated the IRI-induced renal tubular dysfunction and alterations in pro-inflammatory and pro-fibrotic cytokines, which appears to be due to crystalline nephropathy. Extreme caution should be taken when administering ALda-1 or other potentially crystal-forming medications to subjects with underlying kidney disease.

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[60] Can flexible ureterorenoscopy and holmium laser lithotripsy cause renal arteriovenous malformation? Report of a case

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Objective: To report on the second case illustrating the possibility of developing renal arteriovenous malformation (AVM) following relatively safe flexible ureterorenoscopy (FURS) and holmium laser lithotripsy. The use of FURS and holmium laser lithotripsy for the treatment of large renal calculi is gaining in popularity and has been shown to be safer than percutaneous nephrolithotomy (PCNL). The formation of AVM, although rare, is well-documented following PCNL. However, reviewing the literature up to June 2018, revealed only one reported case of AVM following FURS and holmium laser lithotripsy.

Methods: In the current case report, a 79-year-old man with multiple comorbidities including hypertension, diabetes and Stage-4 chronic kidney disease who had previously undergone left-side extracorporeal shockwave lithotripsy and FURS with holmium laser lithotripsy presented with bilateral symptomatic large renal stones. He underwent simultaneous bilateral FURS and holmium laser lithotripsy and was discharged home the next day with almost clear urine.

Results: However, 4 days later, he presented with gross haematuria, which required continuous bladder irrigation and blood transfusion. Computed tomography showed a left subcapsular, perinephric and retroperitoneal haematoma. Angiography revealed pseudoaneurysm in two small branches of the left main renal artery with contrast extravasation. Both branches were selectively embolised using micro-coils and the haematuria ceased.

Conclusion: Although a relatively safe procedure, FURS and holmium laser lithotripsy can be associated

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