key points

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Nephrolithiasis, or renal stone disease, is common and the incidence is increasing globally. In the UK the lifetime risk is estimated to be 8-10%. On a population level, the increase in stone incidence, erosion of gender disparity, and younger age of onset is likely to reflect increasing prevalence of obesity and a Western diet with a high intake of animal protein and salt.

Stones can be detected by a variety of imaging techniques. The gold standard is a non-contrast CT of kidneys, ureters and bladder (CT KUB) which can identify > 99% of stones. CT KUB should be the primary mode of imaging for all patients with colic unless contraindicated. In such instances, or if a CT KUB is not available an ultrasound KUB is an alternative. This has advantages in terms of radiation exposure and cost, but is limited in sensitivity, particularly for ureteric stones. Once diagnosed, a plain film KUB can be used for follow-up of radiopaque stones.

For most patients diclofenac is a reasonable first choice of analgesia, e.g. 50-100 mg rectally, or 75 mg IM. Opioid medication can worsen nausea and be less effective, but should be used (e.g. 2.5 mg SC diamorphine) if there is a contraindication to NSAIDs. A combination of diclofenac, paracetamol, and/or codeine regularly can provide adequate pain control for many patients. Failure of this analgesic combination should prompt consideration of secondary care support.

If a ureteric stone < 5 mm in diameter is identified, the expectation is that this will pass without intervention. Initially medical management is still useful for stones between 5 and 10 mm in diameter, but urology input is more likely to be necessary as up to 50% of these may require intervention. Stones that are > 10 mm in diameter should be discussed with the urology service as they are unlikely to pass spontaneously.

The most important advice for all patients, regardless of stone composition, is a copious fluid intake, a minimum of 2 to 2.5 L/day. Patients should avoid a high-salt intake and maintain a healthy weight. Specific dietary measures are only required when there are recurrent calculi.