

Endourology

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Endourological procedures are the current preferred mode of treatment owing to their minimal invasive nature, technological advancements in instrumentation and more efficient energy sources for stone fragmentation. Current energy sources are pneumatic, US or laser lithotripsy. The type of energy source depends on the type of surgery and stone characteristics. Laser energy can be delivered via flexible instruments. Ureterorenoscopy Ureterorenoscopes (URSs) are long thin scopes that are used to remove ureteric and renal stones. They have working channels that allow for the introduction of energy sources, graspers and baskets. Current models are either semirigid or flexible scopes. A semirigid URS is usually used with a pneumatic lithotripter or laser energy device. Complications include ureteric perforation, avulsion and retropulsion. Ureteric avulsion can be avoided by careful use of baskets under vision. URSs can also be used in patients with bleeding disorders, with a moderate increase in complications. A slimmer and more flexible URS with active deflection of the tip and laser technology with thinner fibres allows for retrograde access to the kidney via the ureteric orifice. This procedure avoids the morbidity associated with percutaneous nephrolithotomy (PCNL). Laser is used as an energy source for stone fragmentation. Indications for retrograde intrarenal surgery (RIRS) /uni25CF Renal stones <2 /uni00A0 cm. /uni25CF Lower pole calculi. /uni25CF Obesity . /uni25CF Musculoskeletal deformities (e.g. kyphoscoliosis) and renal anomalies (HSK or pelvic kidney). /uni25CF Bleeding diathesis. Percutaneous nephrolithotomy PCNL involves removal of renal stones by creating a track between the skin and the pelvicalyceal system. Typically , this procedure is done in the prone position. Fluoroscopy or US is used for localisation. The posterolateral calyx is commonly chosen for entry . US in conjunction with pneumatic and laser lithotripsy is the most common energy source used. Complications include bleeding, infection and pleural violation in cases of supracostal puncture. Severe bleeding may require selective angioembolisation. Indications for percutaneous nephrolithotomy /uni25CF Renal stones >2 /uni00A0 cm. /uni25CF Lower pole renal stones with anatomy that is unfavourable for SWL. /uni25CF Failed SWL or RIRS for renal calculi. /uni25CF Staghorn calculi. Contraindications to percutaneous nephrolithotomy /uni25CF Pregnancy . /uni25CF Untreated UTI. /uni25CF Bleeding diathesis. /uni25CF Current anticoagulation. Miniaturised percutaneous nephrolithotomy Miniaturised PCNL (e.g. mini-perc) involves the use of smaller access tracks. The standard PCNL access track is >28Fr compared with miniaturised versions using <22Fr tracks. Miniaturised PCNL is most useful in patients with a smaller stone burden and in children. Lateral and supine PCNL are associated with fewer anaesthetic complications. Moreover, concomitant flexible ureteroscopy for endoscopic combined intrarenal surgery can be done to address complex renal stones, multiple stones or stones in challenging locations.

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