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Urologist

Ureteroscopic & pyeloscopic stone surgery

Indication

Most stones in the lower and mid ureter and many stones in the upper ureter can be accessed with the ureteroscope, a long thin telescope passed up the urethra through the bladder and into the ureter.

Procedure

Under a general anaesthetic or occasionally a spinal anaesthetic, a cystoscope (bladder telescope) is passed up the urethra into the bladder and a very fine slippery flexible wire is passed under x-ray control up the ureter. The cystoscope is removed and the ureteroscope is then passed up the urethra through the bladder and up the ureter next to the guide wire under direct vision as well as x-ray control to the stone. If the ureter is very tight sometimes this may require dilatation to enable introduction of the ureteroscope. Small stones can be extracted in a fine wire basket and larger stones may require vaporization/ fragmentation using the holmium laser. A ureteric stent is then usually inserted under x-ray control. This is a fine hollow flexible polyurethane tube about 3mm in diameter which enables urine to drain freely from the kidney down into the bladder past any swelling or inflammation in the ureter resulting from stone impaction and instrumentation.

Complex Surgery

Lower ureteric calculi are usually treated with the rigid ureteroscope but high ureteric calculi or some renal calculi can be treated using a very fine flexible fiber-optic ureteroscope as a pyeloscopy. Stones too big to basket can again be fragmented using the Holmium Laser. This is very delicate, demanding and time-consuming work.

Post operatively

There are no cuts or wounds following this surgery but it is normal to experience some discomfort and irritation on voiding for a short time post operatively relating to the urethral instrumentation. The presence of the ureteric stent typically also causes a degree of irritation. There is usually some blood in the urine and urinary frequency due to the soft coil of the stent in the bladder. Because there are no valves in this stent during voiding some urine refluxes up the stent and it is not uncommon to feel some transient discomfort in the loin after voiding. These symptoms are usually minor, settle with time and disappear completely when the stent is removed. The stent is usually left in place for about a week but for convenience can be left longer or can be removed a little earlier if causing severe irritation. Discharge from hospital is usually either the same day as surgery or the following morning.

Stent removal

The ureteric stent is removed at flexible cystoscopy, which is a minor procedure performed through the Day Procedure Unit in hospital without anaesthetic. Though this is frequently the cause of some anxiety in fact it is not painful, only a little uncomfortable for a couple of minutes and nothing to be concerned about. However this can be performed under a quick general anaesthetic in hospital if desired but is very rarely done this way.

Complications

Ureteroscopic stone surgery is rarely associated with significant complications. Occasional stones may not be accessible to the ureteroscope because of a very tight ureter or a tortuous ureter not negotiable by a rigid instrument. In these situations a ureteric stent is usually left in place to unblock the kidney and dilate the ureter prior to a repeat procedure. Significant ureteric injury with perforation or avulsion is an occasional complication but is extremely rarely seen. Minor trauma is treated simply by leaving the ureteric stent longer than planned but severe cases could result in the need of open surgical repair or even nephrectomy (kidney removal). Prophylactic intravenous antibiotics are administered intra-operatively and post-operative urinary tract infection is possible but very uncommon and would rarely be of any consequence. Very occasionally pain is experienced soon after removal of the ureteric stent due to some residual ureteric inflammation but this usually settles spontaneously.