Laser Ureteric Stone Surgery using Semi-Rigid Ureteroscopy

What is it?

Semi-rigid ureteroscopy is where a long thin lighted telescope is introduced into the ureter from outside the patient without the need for any incision (see diagram below). The diameter of the instrument is less than 2mm and allows visualisation of the lower half of the ureter. A small instrument port allows introduction of micro-baskets and holmium laser fibres (0.2mm in diameter) to manipulate and fragment stones. It is used only to treat stones in the ureter, and cannot treat stones within the kidney (see flexible pyeloscopy information sheet for treatment of stones in the kidney).

What are the main advantages of this approach?

- Allows stone treatment without the need for any incision by using the urethral orifice as the entry point
- A highly successful technique (over 95%)
- Can be performed as day surgery

What are the main disadvantages?

- More invasive compared to shock wave lithotripsy
- Small risk of damaging the ureter (0.5%)

What preparation is required?

As the procedure is performed under general anaesthesia, you should have nothing to eat or drink for 6 hours prior to treatment. Regular medications can be taken with a sip of water with the exception of blood thinning agents (eg. warfarin, aspirin, clopidogrel) or non-steroidal anti-inflammatories which may need to be stopped beforehand. Your doctor will advise you about your specific circumstances. A mid stream urine (MSU) test is required to ensure the urine is sterile before treatment is undertaken.
What do I need to bring to surgery?

- All related imaging such as x-rays, CT scan or ultrasound
- Your usual medications

What happens in the operating room?

You will meet your anaesthetist prior to surgery who will take a thorough medical history. This person will be responsible for your safety whilst you are under general anaesthesia. The procedure will usually take 60 minutes and involves putting a telescope into the drainage tube (ureter) of the kidney and fragmenting the stone with a holmium laser. A temporary double J ureteric stent may be left in place for a short period of time to ensure the kidney drains without risk of blockage.

What are the risks?

This is generally considered a very safe operation. Specific risks to surgery include: infection, minor bleeding, and perforation of the ureter (1 in 200).

What to expect afterwards?

It is normal to feel the need to pass urine frequently and notice blood in the urine following surgery. This will settle over the ensuing days. An oral over the counter medication called Ural can reduce the stinging sensation during urination. You will sometimes have a temporary ureteric stent (see ureteric stent information sheet) following the surgery which allows any swelling in the ureter to settle from where the stone was sitting and causing irritation. The stent maybe attached to a string tether coming out from the urethra which allows easy removal in the doctor’s office. Care needs to be taken so as not to accidentally dislodge the stent by allowing it to get caught on your underwear.

Follow-up

You will be advised after surgery the necessary follow-up arrangements. A script for oral antibiotics will need to be taken for 5 days to prevent infection. You need to drink at least 8 glasses of water a day (2.5L/day). Simple analgesics such as Panadol and Nurofen are usually all that is required, occasionally stronger medication (eg. Panadeine Forte) may be necessary. You will not be able to drive for at least 24 hours after surgery as you have had a general anaesthetic.