

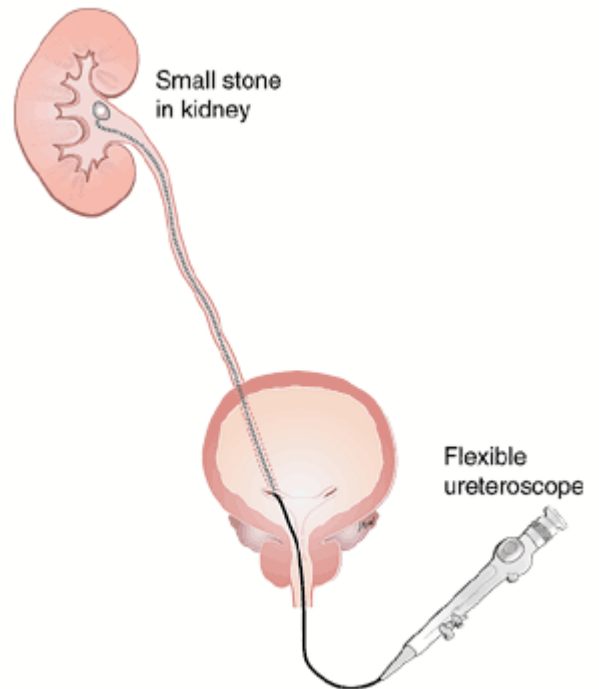
# ALL ABOUT FLEXIBLE URETEROSCOPIC LASER STONE TREATMENT

## Background

You have a urinary tract stone that is to be treated using flexible ureteroscopic lasertripsy.

## Technique

Under general anaesthesia a small telescope is first passed into the bladder. Dye is then injected up the ureter (the tube that drains the kidney into the bladder) and X-rays are taken to obtain a “roadmap”. This X-ray is performed in the operating theatre and is called a retrograde pyelogram. After positioning special flexible wires up the ureter into the kidney, a very fine flexible ureteroscope (“telescope”) is passed up the urethra, into the bladder and up into the ureter. The aim is to be able to see the stone jammed in the ureter or lying inside the kidney. A long, fine (only 0.2mm diameter) glass fibre is then passed up inside the ureteroscope and brought to lie against the stone. The glass fibre is connected to a laser machine. Multiple laser light pulses are passed along the glass fibre and the energy works to fragment the stone into multiple small pieces. The procedure is all performed whilst watching and controlling the procedure on a television monitor.



## Advantages

The major advantages of this method of treating urinary tract stones are:

- This procedure avoids the need for an incision (cut) in the skin.
- It is usually performed as a day case procedure (that is, there is usually no need to stay in hospital overnight).
- There is generally minimal pain or discomfort.
- Quick return to normal activities (usually by the following day).
- It is a generally safe and effective treatment.

## Limitations

The main limitations of this procedure are:

- The main variable is whether or not it is possible to pass the endoscope up inside the ureter. This is often very straightforward but sometimes it is not possible to safely and easily pass the ureteroscope in some people since their ureter is quite tight. It is not possible to predict whether or not somebody’s ureter will be tight or not (unless this is known from a previous procedure).
- Stones that are jammed inside the ureter often cause considerable swelling. It may be possible to easily pass the ureteroscope up the ureter to the stone but due to the swelling around the stone it may not be possible to see the stone properly. The laser then can’t be used safely.
- The stone may be broken up successfully but for the treatment to be successful the stone fragments need to be passed out. Sometimes some stone fragments are too large to pass out by themselves and a second or third treatment may be required.
- Sometimes it is not feasible to treat a large stone in one sitting and several treatments can be anticipated.

## JJ Stent

A JJ stent is a flexible internal drainage tube that runs from the inside of the kidney down inside the ureter to the bladder. Two little curls on either end keep it in place.

- A JJ stent is usually placed following ureteroscopic lasertripsy to allow the kidney to drain properly whilst the small stone fragments are being passed down the ureter. This prevents pain from kidney blockage.
- If the ureteroscope can’t be passed up inside the ureter or if it can be passed but the stone can’t be easily seen, then a JJ stent is still placed. In this situation the stent does two main things: firstly, it relieves any blockage to the kidney by allowing urine to drain properly. Second, the stent causes the ureter to open up over the course of a couple of weeks. This almost always allows for the ureteroscope to be passed very easily and safely up to the stone for laser treatment at a second operation after about a fortnight.

A stent can safely remain in place for a period of about three months if required. It is eventually removed very simply and quickly under local anaesthetic using a small flexible telescope passed up into the bladder. Sometimes a short string is left on the stent and this is used to remove the stent later without the need of a cystoscope. You will be provided with a separate information sheet about JJ stents.

## Treatment alternatives

Urinary tract stones may be treated in a variety of ways including:

- **Open surgery:** this is rarely required these days.
- **Percutaneous nephrolithotomy:** this involves making a small cut on the back and passing a telescope through the skin and through the kidney to reach the stone. The stone is then removed whole or, if it is too big for this, then it is fragmented and removed.
- **Extracorporeal shock wave lithotripsy (ESWL):** this involves focussing shock waves onto a stone from outside using a special lithotripsy machine.

- **Dissolution treatment:** this is suitable for stones that are made of uric acid.
- **No treatment:** this is suitable for some small stones lying inside the kidney and causing no problems or where there is a small stone in the ureter that can be expected to pass spontaneously within a few weeks.

Each of these methods have their own advantages and disadvantages and may be recommended by Mr Davies according to the exact clinical circumstances.

### ***Deciding to have flexible ureteroscopic lasertripsy***

Flexible ureteroscopic lasertripsy is a very commonly performed and generally very safe procedure. However, in order to give informed consent, anyone deciding whether or not to have this procedure needs to be aware of the possible side effects and the risk of complications.

#### ***Side-effects***

Side-effects are the unwanted but usually mild and temporary effects of a successful procedure. For flexible ureteroscopic lasertripsy they may include:

- A small amount of discomfort after the procedure – this will settle in a few hours.
- A stinging sensation when passing urine for a couple of days after the procedure.
- A small amount of blood in the urine – this is quite normal and should clear up gradually within a few days. If a stent has been left in place then bleeding can occur at any time and is of no cause for alarm.
- Stent related symptoms: see the separate information brochure.

#### ***Complications***

Complications are unexpected problems that can occur during or after the procedure. Most people are not affected. However, specific possible complications of a flexible ureteroscopic lasertripsy include:

- Injury to the ureter from the ureteroscope, placement of guide wires or the laser. Ureteric injury is uncommon and is usually treated by placing a JJ stent and allowing the ureter to heal by itself.
- Ureteric strictures: these are narrowings of the ureter caused by scarring.
- Development of a urinary tract infection requiring treatment with antibiotics. Intravenous antibiotics are routinely given at the time of the procedure to help prevent against infection occurring.
- Stone fragments may pile up upon each other inside the ureter and get stuck (known as a “steinstrasse”). This may require further treatment.
- Stone fragments successfully fragmented and lying inside the kidney may not pass out, particularly if they come to lie in the lower part of the drainage system of the kidney.
- Very rarely, the urethra or bladder may be damaged. This can lead to bleeding and infection, which may require treatment with medicines or further surgery

#### ***Follow up***

Dr Hockings will usually arrange to review you about a fortnight following your procedure. Arrangements will sometimes be made for you to have an X-ray performed just prior to this review so that an assessment of any remaining stone fragments can be made.

#### ***Prevention of further stones***

- Maintain a high fluid intake to keep your urine dilute.