

## Extracorporeal Shock Wave Lithotripsy (ESWL)

### **What is ESWL?**

ESWL is a way to break up kidney stones inside the kidney using sound waves. High concentrations of x-rays or ultrasound are directed from a machine (called a lithotripter) outside the body onto the stone.

The ESWL treatment uses shock waves, which are high-pressure energy waves. These are carefully aimed and transmitted through water. They travel safely through skin and other internal tissues and disintegrate the kidney stone in fine sand-like particles that can be passed naturally without difficulty.

### **ESWL Treatment**

Before treatment, you will require certain tests and x-rays. The procedure is usually performed with general anaesthesia. Although you may have heard of people being submerged in water for this treatment, you will never be wet or submerged. Our unit utilises a water filled container that is placed against your side (much like a “water bed pillow”). Sometimes with lighter sedation, you will experience a tapping sensation on your side and will hear a small “bang” each time a shock wave is sent towards your stone. Our anaesthesia staff will monitor you throughout the procedure and ensure that you will be comfortable and not experience pain.

You will usually be admitted on the same day as your treatment. On arrival, an x-ray may be taken to confirm the presence of your stone(s). You should follow the instructions you are given regarding anaesthesia and fasting and which of your usual medications to take and when. Instructions will be given about how to cease blood thinners if you take them.

Please be sure to inform your specialist in advance of your procedure if you have any of the following:

- An artificial heart valve
- A coronary artery stent
- A heart pacemaker or defibrillator
- An aortic aneurysm
- An artificial blood vessel graft
- A neurosurgical shunt
- Any other implanted foreign body
- A prescription for Warfarin, Aspirin or Clopidogrel (Plavix®)
- A previous or current MRSA infection

### **After Treatment**

The majority of lithotripsy patients pass their fragmented stone particles with little discomfort; some require medication for pain, however. You will be carefully observed for any side effects during your short post-operative stay.

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### **What are the alternatives?**

Telescopic or endoscopic surgery (also called ureteroscopy), percutaneous surgery, open surgery or observation to allow spontaneous passage of the stone.

### **What are the complications?**

Most procedures have a potential for side-effects. You should be reassured that, although all these complications are well-recognised, the majority of patients do not suffer any problems after ESWL.

#### **Common (greater than 1 in 10)**

- Bleeding on passing urine for a short period after the procedure
- Pain in the kidney as small fragments of stone pass after treatment (20%)
- Urinary tract infection due to bacteria released from the stone during fragmentation, requiring antibiotic treatment (10%)
- Bruising or blistering of the skin in the loin or on the front of the abdomen
- Need for repeated ESWL treatments (15-20%)
- Failure to fragment very hard stone(s) requiring an alternative treatment
- Recurrence of stones

#### **Occasional (between 1 in 10 and 1 in 50)**

- Severe infection requiring intravenous antibiotics (less than 1%) and sometimes drainage of the kidney by a small drain placed through the back into the kidney
- Stone fragments occasionally get stuck in the tube between the kidney and the bladder requiring hospital attendance and, occasionally, surgery to remove the stone fragments.

#### **Rare (less than 1 in 50)**

- Kidney damage (bruising) or infection needing further treatment