

EXTRACORPOREAL SHOCK WAVE LITHOTRIPSY (ESWL)

Introduction

Extracorporeal shock wave lithotripsy or ESWL is a common treatment used worldwide to treat stones. Thousands of high-energy sound waves are transmitted from outside the body through a conductor (water or gel) onto the stone to break it up into smaller pieces that can pass easily.

What does the procedure involve?

High-energy sound waves known as **shock waves** are aimed at the stones using x-ray guidance to break them into small fragments. The procedure is non-invasive and can be performed under sedation or general anaesthesia. If there are large or multiple stones, several sessions may be required. A JJ stent (plastic tube with curls on either end) may be placed to ensure that urine is able to drain freely through the ureter when the stone fragments are passing through. JJ stents can be removed in two ways, either by leaving a string on the end so it can be pulled out easily or using a telescope for removal in hospital as a day procedure under local anaesthetic.

ESWL video (2:27 mins) <https://www.youtube.com/watch?v=0hKRYVrldI>

What are the alternatives?

Ureteroscopy and lasertripsy
Percutaneous nephrolithotomy (PCNL)
Medical therapy (allowing a small stone pass naturally with drugs)
Dissolution therapy (uric acid stones can be dissolved with drugs)
Observation (stones that are not causing symptoms can be watched)

Patients who have a pacemaker, aortic aneurysm, bleeding condition, uncontrolled high blood pressure, stones that cannot be seen on x-ray and are pregnant or obese cannot have ESWL.

What are the risks of surgery?

Common (>10%)

Mild bruising in the back
Frequency, urgency, burning or blood in the urine (especially with stent)

Occasional (1-5%)

Infection
Incomplete stone clearance
Ureteric blockage from stone fragments

Rare (<1%)

Damage to the kidney

Anaesthetic or cardiorespiratory problems - intensive care

Chest infection, clots in the legs and lung, stroke, heart attack, death

What should I do before surgery?

- Test the urine 2 weeks prior to the procedure to ensure there is no infection
- Do not eat, drink, or chew gum for 6 hours before surgery
- If you are on blood thinning medication, discuss this with Dr Ooi

What should I expect after surgery?

You can go home on the same day after surgery if you are well and there is someone staying with you for the first 24 hours. If you have a JJ stent with a string taped to the genital area, please try not to pull it out accidentally.

Discharge information

Drink 2L of fluid each day and have a normal diet. Restart blood-thinning medications the next day if there are no bleeding issues. You can drive once you are off any medications that cause drowsiness and can do so safely.

It is common to have some mild burning, frequency and urgency when urinating for a few days. If you have a JJ stent, you will see small amounts of blood in the urine intermittently and experience pelvic or back discomfort during physical activities or when passing urine (pressure transmitted to the kidney through the JJ stent). These symptoms will resolve completely once the stent is removed. If simple pain killers are not enough, please ask Dr Ooi for other medications to relieve the symptoms.

Please contact Dr Ooi's rooms, the hospital, ward or nurse manager if you have any concerns, such as excessive pain, bleeding, difficulty emptying your bladder, fever or feel unwell. General advice is also available on our website in the Procedures section.

Appointments

Dr Ooi will see you to remove the JJ stent 5-7 days after. If you live remotely and things are going well, you may prefer to remove the stent yourself and have a telephone call for follow-up instead. Please ensure you have some strong pain killers available as it is common to have pain in the first 24 hours after stent removal. If there are residual fragments, Dr Ooi will schedule a second operation to clear all the stones and remove the stent.

How can I prevent getting more stones in the future?

https://www.health.qld.gov.au/_data/assets/pdf_file/0033/429729/diet-kidney-stones.pdf