

Extracorporeal Shock Wave Lithotripsy 體外衝擊波碎石術

Introduction

Extracorporeal shock wave lithotripsy is an operation using shock wave from a stone breaker to crush stones into small fragments, in which shock wave is transmitted and focused in the stones through the contact of the stone breaker with skin. Stone fragments will naturally pass with urine.

Shock wave lithotripsy is one of the treatment options for renal calculi and ureteric calculi. Other options include conservative treatment, percutaneous nephrolithotripsy, ureteroscopic lithotripsy, and open or laparoscopic surgery. Additional procedures may be needed, including insertion and removal of an ureteric stent.

Indications

Renal calculi and ureteric calculi

The procedure

1. No need for general or spinal anaesthesia
2. Patient is required to lie on the bed of the stone breaker
3. A small shock wave generator will put on the skin of lumbar or abdominal region of patient
4. Patient is required to have X ray for localization of stones
5. Patient may feel pain in the procedure, and analgesic will be given for pain relief
6. The procedure takes approximately one hour

Possible risks or complications

1. Haematuria, painful and difficult urination and renal colic (common)
2. Injury to the urinary system including rupture and hematoma of the kidney(s) that requiring blood transfusion (<1%), radiological or surgical intervention and nephrectomy
3. Failed stone fragmentation and ureteric obstruction due to stone fragments requiring repeating procedures and ancillary procedures
4. Arrhythmia, radiation hazard, side effects of sedative and medications
5. Injury to adjacent organs including lung, liver, pancreas, spleen and bowel, and organs of lung and pelvic cavity, skin and soft tissues
6. Infection of urinary tract and kidney, septicemia
7. Residual stones and stone recurrence
8. Loss of renal function, and renal failure
9. Mortality (rare)

This list is not exhaustive and rare complications cannot be listed.

Preparation before the procedure

1. Before operation, patient is required to have physical examination, blood tests, X ray tests and electrocardiogram. If indicated, patient will be arranged to visit the specialist(s). Aspirin or anticoagulants should be stopped a few days before the procedure.
2. Patient is required to take low fiber diet or take laxatives the night before operation.
3. Patient will be asked not to eat or drink for 4 hours before operation.
4. Patient may be given intravenous infusion or medications before the operation.
5. In case of an emergency event, the operation will be cancelled but will then be arranged.

After the procedure

1. Haematuria, painful and difficult urination and renal colic (common)
2. There may be some bruising around the treatment site
3. Painful urination, blood stained urine, mild pain between lumbar region and inferior abdomen are common within one week after surgery. They will gradually subside after one or two weeks.
4. Patient is encouraged to drink plenty of water over the next few days for passing stone fragments through urinary tract. In some cases, there will be mild pain or various severities of haematuria during urination.

Consideration after discharge

1. Frequent and uncontrolled urination or slight hematuria is common after procedure.
2. Patient is allowed to walk or climb stairs, but to avoid straining or heavy lifting.
3. Try to drink plenty of water.
4. You should attend the speciality clinic as arranged for follow-up of the progress of stone clearance after the procedure.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.