



瑪麗醫院

QUEEN MARY HOSPITAL

體內碎石治療

INTRACORPOREAL LITHOTRIPSY

I) 輸尿管鏡碎石術
URETEROSCOPIC LITHOTRIPSY

II) 經皮穿刺腎鏡碎石術
PERCUTANEOUS NEPHROSCOPIC LITHOTRIPSY

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體內碎石治療

- I) 輸尿管鏡碎石術
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簡介

體內碎石術是用內窺鏡經尿道插入直達尿結石，然後用激光或氣動彈子強導所產生的能量，直接把尿石擊碎。擊碎的石可用鉗子或籃子取出，亦可讓其自然排出。碎石途徑亦視乎石的大小及位置而定，方法有二：

I) 輸尿管鏡碎石術
適用於輸尿管結石。手術後一般只須留在日間病房休息。

II) 經皮腎穿刺腎鏡碎石術
適用於較大之腎結石和上輸尿管結石，如鹿角石等。若單一的療法不能盡除頑石，可能需結合其他療法。大多數的微創性外科手術，復元速度較傳統之開放手術快，痛楚也較少。

準備工作

- 驗血及X光檢查
- 根據醫護人員的指示停止服食某些藥物，如抗凝血藥物
- 因要作全身麻醉，所以在接受治療前一晚的午夜十二時後開始禁食
- 經醫生解釋後，需簽署手術同意書

過程

I) 輸尿管鏡碎石術
病人需接受全身或半身脊椎麻醉。首先會將半硬式的輸尿管鏡經尿道、膀胱、輸尿管直達結石；再經輸尿管鏡，放入碎石儀器，擊碎結石。然後再用籃子或鉗子將碎石取出或讓其自然隨尿液排出。醫生會按個別病情需要，放入輸尿管導管。大多數病人可於休息數小時後出院。

III) 經皮穿刺腎鏡碎石術
病人需接受全身麻醉。首先放入膀胱導管。在X光透視定位下，於腰背部經皮穿刺後，放入腎內窺鏡；碎石儀器經內窺鏡直達結石將之擊碎。然後用鉗子或籃子將碎石取出。手術後放入腎導管於背部作引流。

護理及建議

- IV) 輸尿管鏡碎石術
- 多飲開水（每日約3-4公升，使排尿量達至每日2-3公升）和休息
 - 在有需要時，可按指示服用止痛藥
 - 按時覆診以安排術後檢查及拔除輸尿管導管
 - 如有劇痛，持續的發熱，小便困難或發燒等情況，請即回急症室就診
 - 有均衡的飲食習慣，多吃高纖維質食物，避免過量肉類。不吃太甜、太鹹和太肥膩的食物

- V) 經皮穿刺腎鏡碎石術
- 多喝開水（每日約3-4公升，使排尿量達至每日2-3公升）和休息
 - 膀胱導管一般可於手術後第一天拔除
 - 在正常情況下，腎導管可於手術後三至四天拔除
 - 腎穿刺的傷口約於腎導管拔除後一星期自然癒合
 - 如有需要，可按指示服用止痛藥
 - 有均衡的飲食習慣，多吃高纖維質食物，避免過量肉類。不吃太甜、太鹹和太肥膩的食物

併發症

- II) 輸尿管鏡碎石術
- 由於體內放置了輸尿管導管，可能感到小便帶血和赤痛
 - 腰部或腹部有輕微痛楚。一般會於數天後消失
 - 泌尿系統感染
 - 輸尿管穿破

- VI) 經皮穿刺腎鏡碎石術
- 小便帶血
 - 腎導管引致腰部不適，數天後會消失
 - 泌尿系統感染
 - 腎盂穿破率少過千分之一
 - 腎血管創傷，引致大量出血

如有任何異常，請即回瑪麗醫院急症室就診。

以上資料由瑪麗醫院外科部提供

INTRACORPOREAL LITHOTRIPSY

- I. Ureteroscopic Lithotripsy (URSL)
II. Percutaneous Nephroscopic Lithotripsy (PCNL)

Introduction

Urinary stones are reached directly by endoscopy. Laser or pneumatic lithotripsy is applied through the endoscope. Stone fragments are removed through the endoscope by instruments or allowed to pass spontaneously. Different methods of approaching the stone are required according to the location of the stone.

- I. Ureteroscopic Lithotripsy
It is suitable for ureteric stone especially those located at distal ureter.
- II. Percutaneous Nephrolithotomy
It is suitable for big renal stone and upper ureteric stones.

Preparation

- Relevant blood and urine tests together with radiological examinations.
- Anticoagulants and aspirin may have to be stopped.
- Fast after midnight.
- A written consent is required

Procedure

I. Ureteroscopic Lithotripsy:
This is usually done under spinal or general anaesthesia. A fine semirigid or flexible fiberoptic ureteroscope is introduced into the affected ureter via the urethra and bladder. The stone is identified and broken down. The fragmented stones are removed by using either a basket or forceps depending on the size and site of the stone. A ureteric drain may be inserted according to the individual condition. No external wound is created. Most patients can be discharged a few hours after the procedure.

II. Percutaneous Nephroscopic Lithotripsy:
This is done under general anaesthesia. The affected kidney is punctured to allow the introduction of nephroscope into the pelvicalyceal system. The stone will then be fragmented and removed through the nephroscope. A nephrostomy tube is inserted to allow urine drainage. This procedure may be performed in more than one session or in combination with other treatment like Extracorporeal shock wave lithotripsy depending on the type and the size of the stone. This is a less painful procedure compared with the traditional open surgical method and allows a rapid recovery.

Care and Advice

- I. Ureteroscopic Lithotripsy
- Please comply with the medication regime as prescribed by your doctor.
 - It is advised to drink 3-4 litres of water per day to increase the urine output to 2-3 litres a day. This will facilitate the passage of stones.
 - Follow up according to schedule for removal of ureteric stent if necessary.
 - Seek medical advice if persistent fever, loin pain or voiding difficulty.
 - Stone formation may be prevented by a well balanced diet of high fibre, low salt, low fat and low sugar.

- II. Percutaneous Nephroscopic Lithotripsy
- Please comply with the medication regime and take analgesic as prescribed by your doctor.
 - It is advised to drink 3-4 litres of water per day to increase the urine output to 2-3 litres a day. This will facilitate the passage of stones.
 - Urethral catheter is usually removed one day after the surgery.
 - Nephrostomy tube will be removed according to the postoperative course.

- Wound will heal up about one week after removal of the nephrostomy tube.
- Stone formation may be prevented by a well balanced diet of high fibre, low salt, low fat and low sugar.

Potential complications

- I. Ureteroscopic Lithotripsy
- Voiding difficulty and voiding of blood stained urine if an ureteric stent is inserted.
 - Pain over the loin, lower abdomen for the first few days after the procedure is expected.
 - Urinary tract infection.
 - Perforation of ureter.
- II. Percutaneous Nephroscopic Lithotripsy
- Voiding of blood stained urine.
 - Pain induced by the nephrostomy.
 - Urinary tract infection.
 - Perforation of the renal pelvis.
 - Massive bleeding due to renal vessels damage.

Return to Queen Mary Hospital
Accident & Emergency Department immediately
if there is any suspicion of complication

Information provided by Department of Surgery,
Queen Mary Hospital

輸尿管內視鏡碎石手術

簡介

輸尿管連接腎臟與膀胱，運送腎臟排出的尿液至膀胱儲存。若輸尿管有石阻塞，病人會有絞痛或鈍痛。情況嚴重可引致腎功能減退。需要施行手術治療。



激光機

準備

- ◆ 如需接受全身麻醉，要禁食六小時
- ◆ 需簽署手術同意書



手術進行中，醫生從螢光屏上觀看碎石的過程

過程

- ◆ 在X光顯影下，把輸尿管鏡經尿道、膀胱推進入輸尿管
- ◆ 然後利用激光或超聲波把石擊碎，碎石可隨尿液排出體外
- ◆ 亦可用儀器將石取出。醫生可從螢幕觀看碎石的情況
- ◆ 必要時，醫生會用導管擴張輸尿管。數星期後，再施行局部麻醉，用膀胱鏡取出導管

護理和建議

- ◆ 接受全身麻醉後，可能會感疲倦、暈眩、渴睡，需留在日間護理中心休息數小時接受觀察
- ◆ 因曾接受全身麻醉或鎮靜劑，手術後會思睡。故此需要留在家中休息最少24小時，最好由家人照顧。切勿：
 - 駕駛汽車、煮食、操作機器或危險工具
 - 飲用含有酒精的飲料及服食含有鎮靜劑的藥物
 - 作出重要決定或簽署文件
- ◆ 需要時，可服用止痛藥
- ◆ 手術後，偶有喉痛、頭痛、頭暈、嘔吐或靜脈穿刺位發癢等，是麻醉後常見的現象，數天後會自然消失
- ◆ 手術後首兩日，病人可能會感少許

腰痛、小便灼痛、尿液呈微紅或含少許血塊或砂石。數天後此現象應漸漸消失

- ◆ 手術後首兩天，每天喝水2至3公升，以助排尿。要停止飲咖啡、茶、可樂及酒精類飲品

飲食

返家後，初期可先進食流質；如無不適，可進食固體食物。

覆診

- ◆ 出院後翌日早上及第三日，本中心職員會致電閣下查詢康復情況
- ◆ 按時到指定地點覆診

併發症

如有下列情況，應立即往醫院急症室求診：

- ◆ 傷區嚴重疼痛，服止痛藥無效
- ◆ 小便困難
- ◆ 手術後2日，小便仍有血塊或呈紅色
- ◆ 發熱(體溫38°C或100°F以上)

如有任何查詢，請致電：

東華醫院: 2559 9399 (辦公時間)

9309 1329 (非辦公時間緊急求助)

以上資料由東華醫院外科部提供。



瑪麗醫院
Queen Mary Hospital



葛拿洪醫院
Grantham Hospital



贊育醫院
Tsan Yuk Hospital

輸尿管內視鏡碎石手術

URETEROSCOPIC LITHOTRIPSY



麥理浩復康院
MacLhose Medical
Rehabilitation Centre



SINCE 1876
TWGHs
東華醫院
Tung Wah Hospital
東華三院馮克敏醫院
Fung Yiu King Hospital



禮德公爵夫人兒童醫院
Duchess of Kent Children's Hospital

URETEROSCOPIC LITHOTRIPSY (URSL)

Introduction

Ureters convey the urine from the kidneys to the urinary bladder. Patients with ureteral stones will present with renal colic or dull loin pain; if the problem is serious, renal function will be impaired. Therefore, surgical intervention is necessary.



Versa pulse select laser system

Preparation

- ◆ Fasting for 6 hours prior to procedures performed under general anaesthesia



- ◆ A written consent is required

Procedure

- ◆ Ureteroscope is passed through the urethra and urinary bladder up to the ureter under X-ray guidance
- ◆ The ureteral stones can be disintegrated by laser or ultrasound into small pieces, which can then be passed out along with urine
- ◆ The stones can be extracted with instruments
- ◆ Internal ureteral stents will be placed to facilitate healing and ensure drainage if necessary
- ◆ The stent will be removed with cystoscope a few weeks after the operation under local anaesthesia

Care and Advice

- ◆ After general anaesthesia, you may feel tired, dizzy or weak. You will rest and be observed in our centre for a few hours until you are fit to go home
- ◆ Stay at home for at least 14 hours. A mature adult should accompany you

for the first 24 hours, You must avoid:

- Driving, cooking or operating a motorized vehicle or equipment
- Taking alcoholic drinks or sedatives
- Signing any legal document or making important decisions

- ◆ You may have sore throat, headache, vomiting or bruises at the puncture site occasionally. They will subside after a few days
- ◆ Take painkillers as prescribed
- ◆ Patients may have loin pain or burning sensation during micturition. Sometimes the urine may turn red, or it may contain blood clots or small pieces of broken stones. These will disappear in a few days
- ◆ During the first 2 days, drink a lot of water (2 - 3 Litre per day) to facilitate urination. Avoid coffee, tea, coke or alcoholic beverages

Follow up

- ◆ We will give you a call on the first and third day after the operation to enquire about your condition (Tung Wah Hospital only)

- ◆ Follow up as scheduled

Complications

You have to attend the Accident and Emergency Department of a hospital if you have any of the following complications

- ◆ Severe pain despite taking the pain killer
- ◆ Difficult to or cannot pass urine
- ◆ Continue passing blood clots and blood in urine 2 days after operation
- ◆ Fever (Body temperature above 38°C or 100°F)

Should you have any enquiry about the operation, please phone to:

Tung Wah Hospital:

2559 9399 (Office hour)

9309 1329 (Non office hour emergency)

Queen Mary Hospital: Please consult your doctor-in-charge

Information provided by Department of Surgery, Tung Wah Hospital.