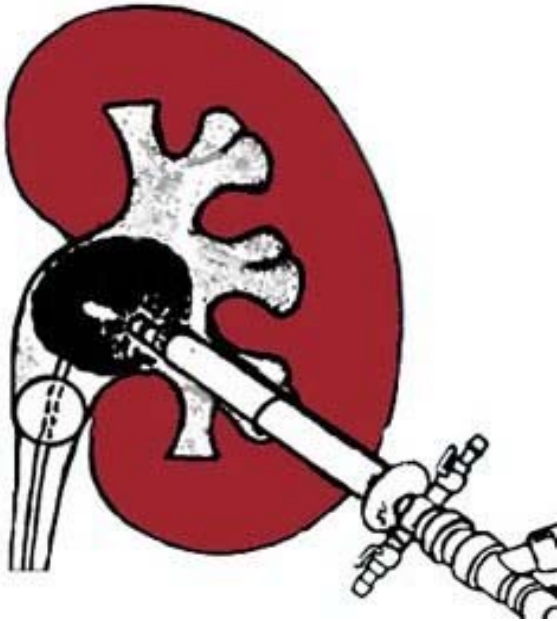


Percutaneous Nephrolithotomy (PCNL)

What is it?

Percutaneous Nephrolithotomy (PCNL) is the preferred technique for treating large stones (over 2cm in diameter) within the kidney. It involves keyhole surgery performed through a 1cm incision in the skin overlying the kidney (*see diagram*).



What are the advantages?

- Allows large or complicated stones to be treated in a minimally invasive fashion, where in the past this would have necessitated a large skin incision.
- Hospital stay is 3-4 days, and out of hospital recovery time is significantly shorter than traditional open surgery.

What are the disadvantages?

- Compared to traditional treatments of large complex stones, there are no disadvantages. Improved techniques and equipment have allowed this type of surgery to be safer than ever before.

What preparation is required?

You will be required to have detailed imaging to allow the surgeon to assess the stone in fine detail regarding its relationship to the kidney and nearby structures. This will enable the surgeon to plan the best access point(s) to the kidney to allow effective clearance of stones.

As the procedure is performed under general anaesthesia, you should have nothing to eat or drink for 6 hours prior to treatment. Regular medications can be taken with a sip of water with the **exception** of blood thinning agents (eg. warfarin, aspirin, clopidogrel) or non-steroidal anti-inflammatories which need to be stopped for 7-10 days. A mid stream urine (MSU) test is required to ensure the urine is sterile before treatment is undertaken. Other tests required include urine culture, kidney function studies, and complete blood counts. These tests will all be organized from the rooms after your consultation.

What are the risks?

This form of surgery is low risk if performed by an urologist who is specifically trained in this technique, and aided by meticulous pre-operative planning. The specific risks are uncommon but include infection, excessive bleeding (necessitating blood transfusion 2%, embolisation 1%, renal exploration 0.5%), and adjacent organ injury (spleen, liver, bowel, and lung).

What do I need to bring to surgery?

- All related available imaging such as KUB (kidneys, ureter, and bladder) x-ray, CT scan abdomen, or kidney ultrasound
- Your usual medications

What happens in the operating room?

The operation is performed under a general anaesthetic and lasts approximately 2 to 3 hours. It is a team effort requiring coordination between surgeon, anaesthetist, radiology and nursing staff. You will be positioned on the operating room table lying on your front “stomach” for the duration of the surgery. The procedure is accomplished with the assistance of x-ray imaging to guide entry of a 1cm tube into the kidney. This provides access into the kidney drainage system allowing telescopes and instruments to visualize, fragment and remove stones. A drainage catheter (nephrostomy tube) which exits through the skin is left in the kidney at the end of the procedure.

What to expect afterwards?

You will have a temporary catheter called a nephrostomy tube draining the kidney, as well as a urinary catheter in-situ. They will be removed prior to discharge from hospital. The urine will be bloodstained for up to a week after discharge from hospital. Imaging is performed immediately after surgery to assess stone clearance. Occasionally, further minor surgery is required to clear any remaining stones to achieve complete stone clearance. Your hospital stay will be 3-4 days on average.

Follow-up

You will be required to take it easy during the recovery phase for several weeks. There should only be minimal discomfort from the wound. Oral antibiotics will be given for a further five days to prevent infection. It is important to inform us if you feel unwell with fevers, chills, or develop heavy bleeding in the urine. Your initial follow-up will be in 6 weeks after discharge. Occasionally, a urinary stent is left to ensure the urine drains correctly into the bladder. This will require removal at a later time.