

PERCUTANEOUS NEPHROLITHOTOMY (PCNL)

Introduction:

Percutaneous nephrolithotomy (PCNL) is a treatment for large kidney stones (typically stones measuring larger than about 1.5cm). The surgeon introduces a long cylindrical sheath through a small skin incision in the back. A scope is passed through the sheath to visualize, break up, and remove kidney stones. The procedure is performed under general anesthesia.

Before the procedure, the patient must first have a small catheter (a nephrostomy tube) inserted through the back into the kidney. This procedure is done with local anesthetic +/- sedation (but not general anesthesia) by a radiologist under imaging-guidance. This may be done earlier the same day, or several days before, the PCNL. At the time of PCNL, the surgeon passes a wire through this nephrostomy tube, removes the tube, and inserts the access sheath over the wire.

In some circumstances, such as small kidneys or kidneys with scant urine around the stone, patients may require an initial procedure under general anesthesia before nephrostomy tube insertion in which your surgeon will insert a scope through the urethra into the bladder and then advance a stent up the ureter. This allows the radiologist to inject saline or dye into the kidney before inserting the nephrostomy tube. When this initial first step is required, patients will undergo three procedures on the same day; 1. stent insertion under general anesthetic, 2. nephrostomy insertion by a radiologist under local anesthetic and/or sedation, and 3. PCNL under a second general anesthetic.

After PCNL, patients will wake up with a nephrostomy tube draining urine out their back to a bag. This is usually removed the day after surgery. Patients are usually discharged after one night in hospital. A stent may be left in the ureter for several weeks following surgery to prevent stone fragments from blocking the ureter. Stents are removed under local anesthetic at a follow-up appointment during which a scope is inserted into the bladder; this typically takes only a couple of minutes.

Side effects and potential risks:

It is common to have some blood in the urine and soreness at the incision site for a few weeks after PCNL. After the nephrostomy tube is removed, it is common to have some urine leaking from the skin incision for a few days, until the skin site has healed. Patients may experience several weeks of frequent urination, urgency to urinate, some burning with urination, and some discomfort in the kidney during urination.

Rare complications include major bleeding, infection, leak of urine into the abdomen, and injury to the kidney, ureter or surrounding organs.

Discharge instructions:

In most cases, patients are admitted to hospital for one night after PCNL surgery. You will have a nephrostomy tube (a tube draining urine through the back). This is often clamped on the morning after surgery and if you do not experience pain or fever, the tube is removed and you are discharged home. In some cases, patients may go home with the nephrostomy tube indwelling for a short period of time.

You should avoid strenuous activity or heavy lifting for 3-4 weeks. Time off work varies depending on your job, but most patients can return to work after 3-4 weeks. Your Urologist will prescribe a painkiller which most patients take for the first 2-3 days after surgery. Antibiotics are not usually necessary but may be prescribed in some circumstances. You should stay well hydrated in order to dilute your urine and prevent blood clot formation. If you were instructed to hold blood thinners for the treatment, you can resume these once your urine has been clear for 2 consecutive days.

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If an internal stent was inserted at the time of surgery, you will be given an appointment to return to hospital for stent removal, typically after about 4-6 weeks. This is a quick procedure (<5 minutes) done with local anesthetic during which your surgeon will introduce a thin camera through the urethra to remove the stent. There is no special preparation for this procedure; you may eat, drink, and drive normally, and you will be discharged home immediately after the stent is removed.

Questions?

It is important that you are fully informed and have had all your questions answered prior to the procedure. If you have any questions or concerns at any time either before or after the procedure, please discuss with us