

A PATIENT GUIDE TO Percutaneous Nephrolithotomy

WHAT IS A percutaneous nephrolithotomy?

A *percutaneous nephrolithotomy*, or PCNL, is a kidney stone surgery for large or multiple stones. The doctor performs the surgery in a hospital operating room. It usually requires a hospital stay of *one to two nights*.

WHAT HAPPENS DURING the procedure?

A PCNL typically lasts one to three hours. After you are under anesthesia, the doctor makes a small incision in your back. The doctor inserts a protective sleeve called a sheath through your back and into your kidney. The doctor then passes a video scope called a nephroscope through the sheath to locate and remove the kidney stones.

To help your kidney heal and drain urine during the healing process, your doctor may place a nephrostomy tube or a ureteral stent at the end of the procedure.

Some patients require a second operation to remove all of the stone. If so, the nephrostomy tube and stent may be left in place until the next operation.

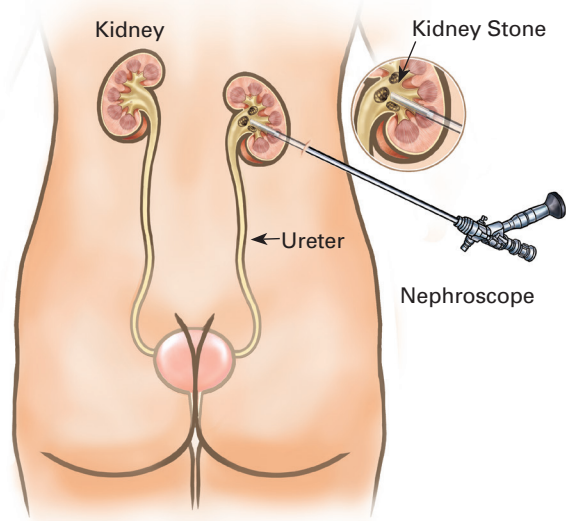


FIGURE 1: Percutaneous Nephrolithotomy

WHAT SHOULD I DO BEFORE the procedure?

There are three important things to do before your procedure:

Talk with your doctor. Let your doctor know:



- All of your prescription medicines, vitamins and supplements, herbs and natural remedies, and over-the-counter drugs.
- Any known allergies you have to medicines and the contrast agent used in some X-rays.
- If you may be pregnant.

Review the pre-operative directions. Make time to review these directions provided by your doctor.

For example, you may need to:



- Go to appointments for medical tests before the procedure, such as an electrocardiogram (EKG), X-rays, and blood and urine tests.



- Discuss with your doctor medicines that might increase your risk of bleeding, for example, aspirin, ibuprofen, warfarin, clopidogrel, and non-steroidal anti-inflammatory drugs. You may need to stop taking some of these medicines before the procedure.



- Take antibiotics, if prescribed, to help prevent infection.
- Check with your doctor on which of your regular medicines to take the morning of surgery. On that day, take these medicines with only a small sip of water.



- Have nothing to eat or drink after midnight the night before surgery (except the sip of water with your morning medicines).



Arrange for a ride home.

After the surgery, **you cannot drive yourself home.** Before the procedure, ask a family member or a trusted friend to pick you up and take you home. Most hospitals and surgery centers will not allow you to take a taxi home after the procedure.

the procedure?

Common side effects include:

- Nausea and occasional vomiting.
- Pain is common for the first 24 to 48 hours in your kidneys, abdomen, lower back and sides. Pain may increase when you urinate. Take medicine as prescribed.

If you go home with a nephrostomy tube and drainage bag:

- Bloody urine is common. But if the bleeding increases significantly, contact your doctor immediately or return to the emergency room for further evaluation.
- Empty the drainage bag before it gets full. If the bag no longer drains urine and you experience back pain, call your doctor immediately. The tube may be blocked or loose.
- You may notice leakage of urine around the tube and may need to change the dressing.
- It's okay to shower with the bag. It can get wet. However, you must keep the incision site covered with a waterproof dressing.
- Several days after discharge from the hospital, you will go to your doctor's office for removal of the tube.

If you go home with a ureteral stent, your doctor will remove it during a follow-up appointment 4 to 14 days after your procedure.

If you go home with a stent, common side effects include:

- Blood in the urine. Drinking fluids helps to reduce blood clots from forming in your urine.
- Feeling of fullness and a constant need to urinate (urgency and frequency).
- A burning sensation during urination or when you move about.
- Bladder muscle spasms.

At a follow-up appointment, typically 4 to 14 days after the procedure, the doctor removes the stent. Patients are usually awake when a stent is removed. Your doctor may apply a local anesthetic jelly to the opening of your urinary tract (urethra) before the procedure. If it has a string attached, the doctor pulls on the string to remove the stent. Or, your doctor may use a small scope inserted into your bladder to take out the stent.

WHEN SHOULD I CALL

my doctor?

Call if you:

- Have a temperature greater than 100 degrees F or chills.
- Find that the pain medicine is not reducing your pain.
- Cannot tolerate food or fluids.
- If you have excessive blood in the urine, which is typically red, thick and cannot see through it (like ketchup), or if you have blood clots in your urine that make it difficult to urinate, please contact your physician immediately.

Some blood in the urine is normal after a PCNL procedure. Urine colors can range from light pink to reddish and sometimes can even have a brownish hue — but you can typically see through it. Medications to help with the burning sensation can sometimes turn the urine into an orange or blue color.

nephrostomy tube?

A nephrostomy tube is a catheter placed in your kidney that connects to a drainage bag to collect urine outside of your body. The nephrostomy tube is usually removed prior to hospital discharge. Sometimes patients go home with the nephrostomy tube and it is removed several days later during a follow-up appointment.

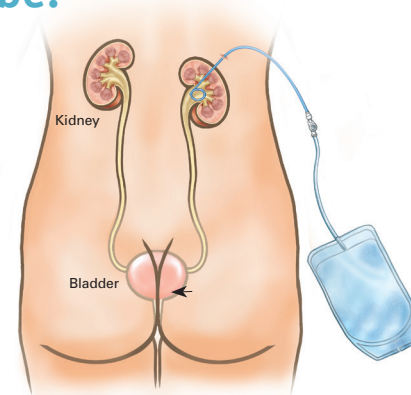


FIGURE 2: Nephrostomy Tube

ureteral stent?

A ureteral stent is a small plastic tube that is placed in your urinary tract to help control swelling and allow the kidney to drain urine. The stent typically remains in your body for 4 to 24 days and is then removed during a follow-up appointment.

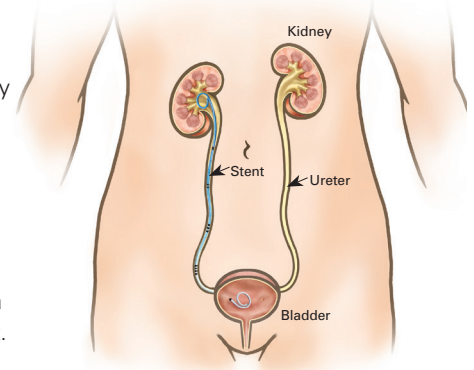


FIGURE 3: Ureteral stent

more stones?

There are steps you can follow to prevent stones from coming back:

- Drink plenty of fluids.
- Restrict your sodium intake.
- Maintain a healthy weight.
- Take medicine. Some patients need medicine to help reduce their risk of developing another kidney stone.
- Make dietary changes, such as reducing your intake of soft drinks, animal protein and salt.

Your doctor will discuss a prevention plan with you after the procedure.

Visit www.mykidneystone.com/PCNL for additional educational resources.