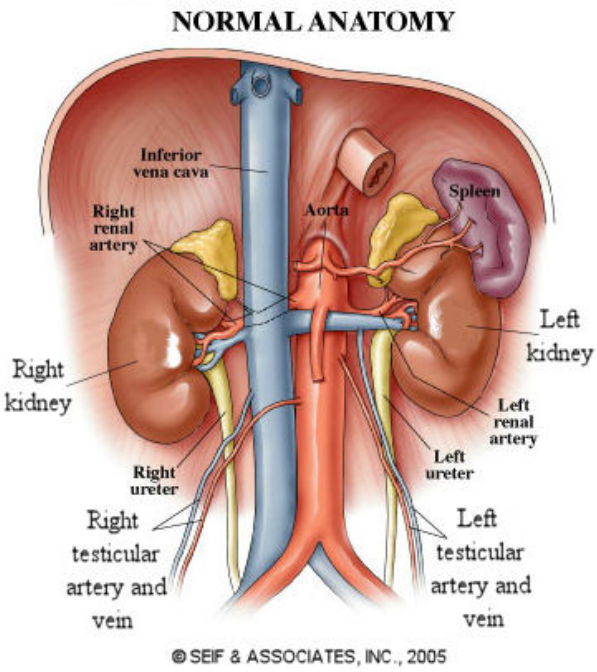
Nephrolithotomy, Percutaneous
Pre-op and Procedure

Kidney stones can cause a great deal of pain. They can block urine from leaving the body. And they can lead to infection. Kidney stones might pass on their own, or they can be broken up by shock waves from a special machine. But sometimes surgery is needed to get rid of kidney stones. One type of surgery is called *percutaneous nephrolithotomy*. "Nephro" means kidney, "litho" means stone and "tomy" means removal by surgery. "Percutaneous" means through the skin. This type of surgery needs only a small cut (*incision*) in the skin.



This surgery may be suggested for various reasons. They include:

- The kidney stones are 2 centimeters wide (about 3/4 inch) or bigger. They also might be oddly shaped.
- Other treatments were tried, but all or some of the kidney stones remain.
- Infection has developed.
- No other treatment can be used.

BEFORE SURGERY

- You may need to take some tests before your surgery. These might include:
  - Blood tests.
  - Urine tests.
  - Tests to make sure your heart is working properly.
- Let your healthcare provider know if you think you might have a urinary tract infection. You will probably need to take an antibiotic to treat this before the surgery.
- Two weeks before your surgery, stop using aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) for pain relief. This includes prescription drugs and over-the-counter drugs such as ibuprofen and naproxen. Also stop taking vitamin E.
- If you take blood-thinners, ask your healthcare provider when you should stop taking them.
- Do not eat or drink for about 8 hours before your surgery.
- You might be asked to shower or wash with a special antibacterial soap before the procedure.
- Arrive at least an hour before the surgery, or whenever your surgeon recommends. This will give you time to check in and fill out any needed paperwork.

LET YOUR CAREGIVER KNOW ABOUT:

- Any allergies.
- All medications you are taking, including:
  - Herbs, eyedrops, over-the-counter medications and creams.
  - Blood thinners (*anticoagulants*), aspirin or other drugs that could affect blood clotting.
- Use of steroids (by mouth or as creams).
- Previous problems with anesthetics, including local anesthetics.
- Possibility of pregnancy, if this applies.
- Any history of blood clots.
- Any history of bleeding or other blood problems.
- Previous surgery.

- Smoking history.
- Other health problems.

THE SURGERY

- The preparation:
  - You will change into a hospital gown.
  - You will be given an IV. A needle will be inserted in your arm. Medication will be able to flow directly into your body through this needle.
  - You might be given a sedative. This medication will help you relax.
  - You may be given a *general anesthetic* (a drug that will put you to sleep during the surgery). Or, you may get a *local anesthetic* (part of your body will be numb, but you will remain awake).
  - A *catheter* (tube) will be put in your bladder to drain urine during and after surgery.
- The procedure:
  - The surgeon will make a small incision in your lower back.
  - A tube will be inserted through the incision into your kidney.
  - Each kidney stone is removed through this tube. Larger stones may first be broken up with a laser (a high-intensity light beam) or other tools.
  - If a kidney stone has already left the kidney, the surgeon would use a special tool to bring it back in. Then it would be removed through the tube.
  - After all the stones are taken out, a catheter will be put in. Fluid can build up around the kidney as it heals. The catheter lets this fluid drain out of the body.
  - A *dressing* (medicine and bandage) will be put on the incision area.
  - The surgery usually takes three to four hours.

RISKS AND COMPLICATIONS

- During surgery:
  - Sometimes all the kidney stones cannot be removed through the tube. Then, the percutaneous nephrolithotomy procedure would be stopped. Open surgery would be used to remove the remaining stones.
- Short-term risks from the surgery could include:
  - Excessive bleeding.
  - Blood in your urine.
  - Holes in the kidney. These usually heal on their own.
  - Pain.
  - Redness or tenderness at the incision site.
  - Numbness (loss of feeling) in the area treated. Tingling also is possible.
  - A pooling of blood in the wound (*hematoma*).
  - Infection.
  - Slow healing.
- Longer-term possibilities include:
  - Kidney damage.
  - Damage to organs near the kidney.
  - Need for a repeat surgery.

AFTER SURGERY

- You will stay in a recovery area until the anesthesia has worn off. Your blood pressure and pulse will be checked often. You might be given more pain medication.
- You will be moved to a hospital room for the rest of your stay.
- The catheter that is taking urine out of your body will be taken out within 24 hours.
- The day after your surgery, you should be able to walk around. Walking helps prevent blood clots (thick clumps that can block the flow of blood).

- You may be asked to do some breathing exercises.
- You will be able to have only liquids for a day or two.
- Before you go home:
  - The catheter that is draining fluid from the kidney area is usually taken out.
  - You will be taught how to care for the incision. Be sure to ask how often the dressing should be changed and when it can get wet.
  - You also will be told what you should and should not do while your kidney and incisions heal. For instance, you may be urged to walk to prevent blood clots.

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