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# MEDICAL FACULTY ASSOCIATES

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THE GEORGE WASHINGTON UNIVERSITY

## **PERCUTANEOUS NEPHROLITHOTOMY (PCNL)**

Urology Clinic  
GW Medical Faculty Associates  
The George Washington University  
2150 Pennsylvania Avenue, NW  
Washington, DC 20037

### **PURPOSE**

Percutaneous Nephrolithotomy (PCNL) provides patients with a safe and effective way to remove kidney stones using a minimally invasive technique. Kidney stones are formed in the urinary tract due to crystallization of chemical compounds in the urine. PCNL is a technique used to remove certain stones in the kidney or upper ureter (the tube that drains urine from the kidney to the bladder).

### **GENERAL INFORMATION**

This procedure has been used on many patients over the last several years. It has replaced the open operation in majority of patients with large kidney stones and those that have failed other treatments. It has been accepted as a safe and reliable technique. Typically, the length of the surgery is 3-4 hours. The surgery is performed by making a small 1-1.5 cm (1/2 inch) incision in the back flank area. A tube is placed through the incision into the kidney under x-ray guidance. A small telescope is passed through the tube to see the stone and remove it. If necessary a laser or other device called a lithotripter may be used. This procedure has resulted in significantly less post-operative pain, a shorter hospital stay, and earlier return to work and daily activities when compared to the open operation.

### **WHAT TO EXPECT PRIOR TO THE SURGERY**

*Step 1* As soon as your surgery is scheduled, call the **PAT (PRE-ADMISSION TESTING) Unit** to speak with a triage nurse at **(202) 715-4557** to assess your pre-

anesthesia needs and to provide pre-operative instructions. This unit hours of operation are 8:00 a.m. – 4:30 p.m. Monday – Friday.

**Step 2 PRE-REGISTER** with the Admissions Office. This can be done by telephone. Call **(202) 715-4907**. You will be asked to provide your name, address, insurance, and next of kin information. Registration is necessary regardless if you are admitted to the hospital.

**Step 3** Schedule an appointment with your primary care / internist for pre-operative evaluation. Information and test results from your evaluation should be faxed to the **PAT Unit** at **(202) 715-4507 or 715-4525**.

### **IMPORTANT REMINDERS**

- Do not eat or drink after midnight the night before your surgery.
- If you are scheduled for outpatient (same day) surgery, you must have a responsible adult escort out of the hospital.

Do not hesitate to ask your physician or **PAT Unit** nurses to clarify any concerns you may have.

### **PREPARING FOR SURGERY**

- Drink clear fluids for a 24-hour period prior to the date of your surgery (please see attachment 1, Clear Liquid Diet).
- Do not eat or drink anything after midnight the night before the surgery and drink one bottle of Magnesium Citrate (can be purchased at your local pharmacy) the evening before your surgery.
- Aspirin, Motrin, Ibuprofen, Advil, Alka Seltzer, Vitamin E, Ticlid, Coumadin, Lovenox, Celebrex, Voltaren, Vioxx, Plavix and some other arthritis medications can cause bleeding and should be avoided 1 week prior to surgery (Please contact your surgeon's office if you are unsure about which medications to stop prior to surgery. Do not stop any medication without contacting the prescribing doctor to get their approval).

### **POTENTIAL RISKS AND COMPLICATIONS**

Although this procedure has been proven to be safe, as in any surgical procedure there are risks and potential complications. Potential risks include:

- **Bleeding:** Blood loss during this procedure is possible and a transfusion is necessary in approximately 20% of patients. If you are interested in autologous blood transfusion (donating your own blood) you must make your surgeon aware. If you wish to make an autologous blood donation, you must first call the GW Hospital Transfusion Services Department at **(202) 715-4398**. They will assist you

in choosing a blood collection facility convenient to you. Please allow at least 5 days for the donated blood to be processed and sent to GW Hospital.

- **Infection:** All patients are treated with broad-spectrum antibiotics to decrease the chance of infection from occurring after surgery. If you develop any signs or symptoms of infection after the surgery (fever, drainage from incision, urinary frequency/discomfort, pain or anything that you may be concerned about) please contact us at once.
- **Tissue / Organ Injury:** Although uncommon, possible injury to surrounding tissue / organs including bowel, vascular structures, spleen, liver, lung, pancreas and gallbladder could require further surgery. Loss of kidney function is rare but is a potential risk. Scar tissue may also form in the kidney or ureter requiring further surgery.
- **Conversion to Open Surgery:** This surgical procedure may require conversion to the standard open operation if difficulty is encountered during this procedure. This could result in a larger standard open incision and possibly a longer recuperation period.
- **Failure to Remove the Stone:** There is a possibility that the stone may not be able to be removed, usually due to the size of the stone. Additional treatment may be required.

## WHAT TO EXPECT AFTER THE SURGERY

Immediately after the surgery you will be taken to the recovery room and transferred to your hospital room once you are fully awake and your vital signs are stable.

- **Post-operative Pain:** Pain medication can be controlled and delivered by the patient via an intravenous catheter or by injection (pain shot) administered by the nursing staff.
- **Nephrostomy Tube:** You can expect to have a small tube coming out of your back to allow urine to drain from the kidney to a drainage bag. This drain usually remains in for 2 days. There is a possibility that you will be discharged from the hospital with a nephrostomy tube.
- **Stent:** You may have a ureteral (internal) stent in place coming from the kidney to the bladder to promote drainage from the kidney.
- **Nausea:** You may experience some nausea related to the anesthesia. Medication is available to treat persistent nausea.

- **Urinary Catheter:** You can expect to have a urinary catheter draining your bladder (which is placed in the operating room while the patient is asleep) for approximately one day after the surgery. It is not uncommon to have blood-tinged urine for several days after surgery.
- **Diet:** You can expect to have an intravenous catheter (IV) in for 1-2 days. (An IV is a small tube placed into your vein so that you can receive necessary fluids and stay well hydrated until you are able to tolerate a diet; in addition it provides a way to receive medication). Most patients are able to tolerate ice chips and small sips of liquids the day of the surgery and regular food the next day. Once on a regular diet, pain medication can be given by mouth instead of by IV or shot.
- **Fatigue** is common and should subside in a few weeks.
- **Incentive Spirometry:** You will be expected to do some very simple breathing exercises to help prevent respiratory infections through using an incentive spirometry device (these exercises will be explained to you during your hospital stay.) Coughing and deep breathing is an important part of your recuperation and help prevent pneumonia and other pulmonary complications.
- **Ambulation:** On the day after your surgery it is very important to get out of bed and begin walking with the supervision of your nurse or family member to help prevent blood clots from forming in your legs. You can expect to have SCD's (sequential compression devices) along with tight white stockings on your legs to also aid in the prevention of blood clots.
- **Hospital Stay:** The length of hospital stay for most patients is approximately 2 days.
- **Constipation:** You may experience sluggish bowels for several days or several weeks. Suppositories and stool softeners are usually given to help with this problem. Taking mineral oil at home will also help to prevent constipation.
- **Secondary Procedures:** Some patients have stones that are very large or that cannot be safely removed at one setting. You may need a "second look" to remove any remaining stones, either during the hospitalization or at another time.

## WHAT TO EXPECT AFTER DISCHARGE FROM THE HOSPITAL

- **Pain Control:** you can expect to have some pain that may require pain medication for a few days after discharge, and then Tylenol should be sufficient to control your pain.
- **Showering:** you may shower at home. Your wound site can get wet, but must be patted dry. Tub baths can soak your incision and therefore are not recommended in the first 2 weeks after surgery. You may have butterfly adhesive strips across your incisions. These are not to be removed. They will fall off in approximately 5-7 days. Sutures will dissolve in 4-6 weeks.
- **Activity:** Taking walks is advised. Prolonged sitting or lying in bed should be avoided. Climbing stairs is possible. Driving should be avoided for at least 1-2 weeks after surgery. Activity can begin as tolerated. You can expect to return to work as instructed by your physician.
- **Follow Up Appointment:** You will need to call the GW Medical Faculty Associates Urology Clinic at (202) 741-3106 soon after your discharge to schedule a follow up visit for 4 weeks after your surgery date with your surgeon.
- **Stent Follow Up:** The length of time the stent remains in place is variable. Your doctor will probably request it to be removed within a 2-6 week period. This can be removed in the doctor's office. It is common to feel a slight amount of flank fullness

and urgency to void, which is caused by the stent. These symptoms often improve over time if the stent is left in.

- **Nephrostomy Site Care:** It is important that urine flow freely through the tube. Check daily to make sure the tube is not kinked. Make sure the stopcock, if present, remains in the open position to allow urine to drain. Keep the tube securely anchored to the skin with tape to prevent pulling and to keep the tube in place. Monitor the amount of drainage, color and odor. Blood tinged urine is not uncommon. Keep the drainage bag below the level of the kidney. It is important to clean the area around the insertion site with mild soap and water each day when you shower. Pat the area dry after showering and clean directly around the insertion site with hydrogen peroxide using a cotton tip applicator. Apply a clean sterile dressing after cleaning the area. If you experience any change in pain, fever, chills, pus forming around the insertion site, the catheter not draining or leaking around the tube you must contact the doctor immediately (see attached contact list).

## CONTACTS

GW Medical Faculty Associates Urology Clinic  
Monday – Friday, 8:30 a.m. – 5:00 p.m.  
**(202) 741-3101**

In the event of an emergency and you need to contact someone in the evening hours or on the weekend, please call the GW Hospital at **(202) 715-4141** and ask to speak to the Urology Resident on call.