UROLOGIC
Limited

Open Nephrolithotomy and Open Pyelolithotomy

A Guide *for Patients*

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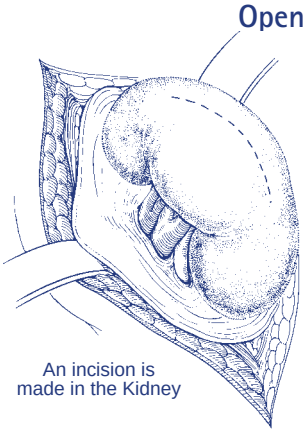
OPEN NEPHROLITHOTOMY AND OPEN PYELOLITHOTOMY

This information is designed to help you , your family and friends prepare for your surgery. It will also help you plan how to take care of yourself in the weeks following your discharge from hospital.

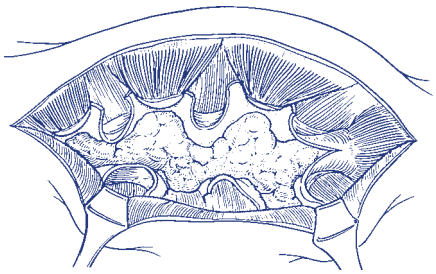
WHAT IS OPEN NEPHROLITHOTOMY OR OPEN PYELOLITHOTOMY AND WHY ARE THEY NEEDED?

An open nephrolithotomy is the removal of a stone from within the kidney and an open pyelolithotomy is the removal of a stone from within the renal pelvis, (the funnel shaped area for urine collection within the kidney) or from the ureter. Both operations are usually done through a 10-15cm incision in the flank (the side of the body between the ribs and the hip) which exposes the position of the stone.

Open Nephrolithotomy

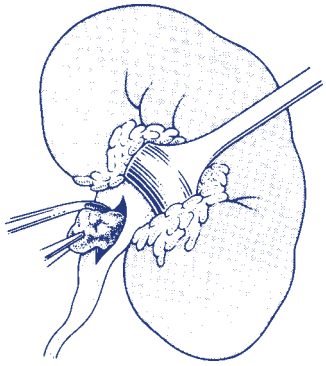


An incision is made in the Kidney



Kidney opened and stone is removed

Open Pyelolithotomy



Open stone surgery such as nephrolithotomy and pyelolithotomy are usually reserved for complicated, difficult stones which are causing blockage or ongoing symptoms such as pain and recurrent infection and are unable to be removed using less invasive treatments.

WHAT DOES THE OPERATION INVOLVE?

The operation is usually done through a flank incision that usually allows for the best possible access. With the kidney and ureter being exposed, the surgeon is able to feel for the stone/s and x-ray imaging can also be used to locate its exact position. Once the stone/s are located an incision is made into the kidney or ureter so the stone/s can be removed. Once the stone/s are removed all the incisions are stitched closed. The surface skin layers are closed with either dissolving stitches or with surgical staples.

A wound drain is then placed to drain any ooze from the area and a nephrostomy tube may also be put in. A nephrostomy tube is a drain that is placed into the kidney through the same incision used to remove the stone/s. It is stitched into place and is connected to a drainage bag that drains any urine, blood or stone fragments from the kidney. If the ureter needed to be incised during surgery a ureteric stent may be placed. This is a thin, soft tube that sits within the ureter. Both ends of the stent are looped and one loop sits within the kidney and the other within the bladder. The stent allows healing to take place and drains the urine and any stone fragments from the kidney.

A catheter (a flexible drainage tube) is also placed through your urethra to drain your urine from your bladder into a bag.
Depending on the location and number of stones, surgery can take anywhere from 2 to 4 hours to complete and usually involves a two to four night hospital stay.

WHAT RISKS ARE INVOLVED WITH SURGERY?

With all surgery there is a risk of infection and blood loss. The kidneys have a large blood supply and there is always some bleeding involved with surgery. In a small number of cases a blood transfusion may be needed to compensate for blood loss during surgery.

In a small number of cases when the ureter needs to be incised during surgery or if a stone is lodged firmly within the ureter, scarring can occur, which can narrow the channel within the ureter. This narrowing is known as a ureteral stricture and is usually easily treated with minor surgery that opens the narrowing.

The upper part of the kidneys sit close to the lungs and on the right side the spleen and on the left the liver. If access to the stone is only possible using a high approach to the upper kidney there is a very slight risk of puncturing a lung, which can cause the lung to deflate and a tube may need to be inserted for a short time to reinflate the lung.

If large or numerous stones need to be removed during surgery sometimes not all of them are able to removed during one operation and further surgery may be needed before all of them can be completely removed.

These are uncommon complications of surgery and occur **very rarely**. The large majority of patients are stone free after surgery and have a speedy recovery.

YOUR CONSENT

We need your permission for your operation to go ahead.
Before you sign the consent form it is important that you understand the risks and effects of the operation and anaesthetic. These will be discussed with you by your doctor and the nurse, should you have any questions, your nurse or doctor would be happy to answer these.

With this surgery there is a small chance that you may require a blood transfusion either during or after surgery. In the unusual event that you did need a blood transfusion and you want to refuse one, it is vital that you tell your surgeon and nurse prior to your operation.

ABOUT YOUR ANAESTHETIC

You will NOT be allowed to eat or drink anything for at least six hours before your surgery. This includes chewing gum and sweets.

This type of surgery requires a general anaesthetic which means you will be asleep throughout the operation and remember nothing of it. This may be used in combination with an epidural, where a solution is injected into your back that will numb the lower half of your body.

If you do not have an epidural anaesthetic after your surgery you may have a P.C.A pump attached to the drip in your arm. P.C.A stands for Patient Controlled Analgesia. It is a computer-controlled machine that delivers pain relief through your drip. You will be able to control the amount of pain relief given but the anaesthetist prescribes the maximum dose. You will receive more information about the P.C.A. pump and your anaesthetic at the pre-assessment clinic.

Feel free to discuss these options, and your questions with the anaesthetist.

YOUR OPERATION

On admission you will be informed of an approximate operation time and prepared for theatre by your nurse.

You may be fitted with T.E.D. stockings which help aid circulation and prevent blood clots which there is always a slight risk of with surgery. You may also be instructed about special deep breathing and leg exercises that you should do after surgery.

A shave of the surgical site is required. This is usually done just prior to going to theatre or in theatre itself.

You may be given some tablets before theatre. These are given after discussion with your anaesthetist and may include tablets for tension, nausea and pain prevention.

You will be escorted to the theatre, where you will be transferred to the theatre table. Anaesthetic staff will then insert a drip in your arm and will attach various monitoring devices. Once you have been completely prepared and given your anaesthetic, surgery will begin.

When the operation is completed you will go to the recovery room for a short while where you will be cared for until you are ready to be transferred to the ward.

AFTER SURGERY

Your nurse will check your blood pressure and pulse routinely. Your wound drain and wound will be checked for any bleeding and the urine output from your nephrostomy tube and catheter will be monitored closely.

You will have a drip in your arm to make sure you receive adequate fluids. This will be removed once you are drinking normally. You can usually drink on the first day after surgery, depending on what was done during surgery. You may eat once you are tolerating fluids. You will have the P.C.A or epidural in place for pain relief.

Our aim is to keep you as comfortable as possible, it is important that the nurse know when the pain or discomfort starts so your symptoms can be treated and relieved as quickly and easily as possible. At all times, your nurse is there to help you, please ring your bell if you need assistance and your nurse is not nearby.

DAY ONE AFTER YOUR OPERATION:

The morning after surgery the nurse will help you get up into a chair for a wash by the bedside or if you feel up to it you can go for a shower.

You will be told if you can eat and drink. Until you are able to drink your drip will keep you well hydrated and provide the nutrients you need. You may also have antibiotics through your drip.

You will be given regular pain relievers, such as Panadol to help keep you comfortable.

You should do regular deep breathing and leg exercises after surgery until you are fully mobile. The physiotherapist may come and see you to give further instructions.

DAY TWO OR THREE AFTER YOUR OPERATION:

On the second or third day if the drainage from your wound drain is minimal it will be removed. Your catheter will also be removed if you are up and about and your urine output is sufficient. If you had a nephrostomy tube this would be clamped so that the urine can drain as it normally would from the kidneys down to the bladder. If you have no pain or wound leakage after clamping the nephrostomy it can be removed.

You will be helped to walk down for a shower and at this time your wound dressing is usually removed.

If you are comfortable on regular oral pain relievers you will have your P.C.A. or epidural removed. The drip is not completely removed until the course of post-operative antibiotic treatment is complete. The need for antibiotics and the length of treatment will be different in each individual case but usually lasts about two to three days.

Usually by the second or third day after surgery all the drains and tubes have been removed. All the sutures used are dissolving so don't need to be removed, however if wound staples are used these usually stay in for 7 to 10 days and are taken out by your own doctor or by the district nurse.

GOING HOME

Once your catheter, nephrostomy and wound drain have been removed and you are eating and drinking and passing urine normally you will be able to go home. In the unlikely event that all of the stone fragments could not be removed and further surgery is required, you may be sent home with your nephrostomy tube still in. If this were the case the tube would usually have a plug in the end of it and it would be curled up and plastered over so it is out of the way. The district nurse would also visit to change the dressings to the tube as necessary until you return to have further surgery.

Before leaving the ward you will be given a discharge information letter which contains helpful information for when you get home.

You will be given or sent an outpatient appointment that is usually 4-6 weeks after your operation. If you had a stent placed during surgery this would be removed then under local anaesthetic. A flexible telescope is passed up the urethra to the bladder so the end of the stent can be grasped and it can be removed.

We will send a letter to your own doctor about your operation and the details of your treatment while you were in hospital.

ONCE HOME

Before discharge your nurse will inform you about taking mild pain relievers, should you have any pain or discomfort after you return home.

The internal healing after surgery takes 4-6 weeks. During this time you should avoid any heavy lifting, straining or strenuous activity. Apart from strenuous activities you will be able to continue with your normal daily routines, as you feel able.

You should wash your wound with water only. No soap or powder is to be used directly on your wound until it is healed completely. Your wound would usually be dry within 48 hours of surgery, prior to this you may need to place a dry dressing over it to stop any slight ooze marking your clothing.

Avoid becoming constipated by keeping up a good fluid intake and eating fruit and foods high in fibre. If you have problems with constipation you may require a stool softener which you will be able to get from your nearest pharmacy.

Contact your own doctor if:

- Your wound becomes red, hot, swollen, painful or continues to discharge.
- Your urine becomes cloudy, offensive smelling or you have any other signs of a urine infection.
- You have any concerns at all.

Open surgery for kidney stones has been used for many years and many people like yourself have undergone it with a high degree of success. There is every reason to believe that you will experience a successful outcome and be stone free. A positive attitude on your part will make everything easier.

FURTHER INFORMATION

HOW DO STONES FORM AND WHAT CAN I DO ABOUT STOPPING THEM FROM FORMING AGAIN?

A stone begins as a tiny particle that is left behind when the urine flows out of the kidney. Over time, particles bond together and the stone becomes larger. The majority of stones are eventually carried out of the kidney into the ureter and down to the bladder. However some stones remain in place within the kidney and continue to grow. When these stones start to block the flow of urine they can cause pain and infection and this is when treatment is given to remove the stone/s and resolve symptoms.

Once a person has had a stone they are more likely to develop another stone compared to someone who has never had a stone before. Most stones are caused by a metabolic imbalance, which is an imbalance of the chemical processes that occur in the body. These imbalances are not life threatening but can lead to a build up of certain minerals within the urine which form into stones.

The best way to prevent further stones forming is to drink, drink, drink. The best fluid to drink is water, however, any fluid is O.K., but tea and coffee should be restricted. Your daily fluid intake should be between 2-3 litres, or more in the summer months. You will know when you are drinking enough by the colour of your urine, which should stay a very pale yellow to clear colour. You should also maintain a well balanced diet and eat foods in moderation. If stones continue to reform frequently and there is a proven metabolic problem, certain diet restrictions and medication may be needed to help prevent further formation of stones.

While you are in hospital we will do everything we can to make your stay as comfortable as possible. The nursing and medical staff are always available to help with whatever needs you have. If you are worried about anything before or after your surgery, or if you have any further questions or would like more information, please do not hesitate to ask your nurse who will be more than happy to help you.