Pneumonectomy

Lung Cancer Surgery

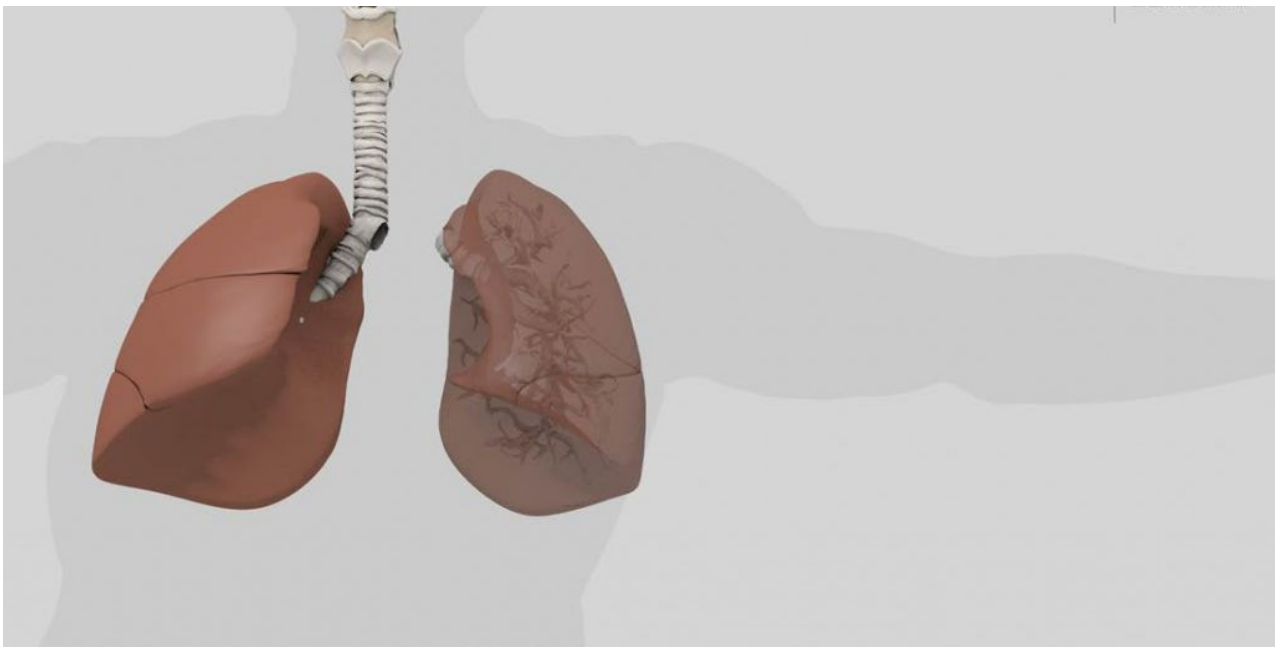
Welcome to the Thoracic Surgery Department at Queen Elizabeth Hospital Birmingham. The Thoracic team is a surgical team that deals with problems involving the chest (e.g. lungs, airways, heart etc.)

We hope that this leaflet can answer some questions or queries you might have about your procedure. The information provided in this leaflet will be discussed with you in full before your admission.

Pneumonectomy

What is a pneumonectomy?

For some lung cancer cases, the size or position of a tumour may mean it is necessary to remove the whole lung rather than just to remove part of the lung (i.e. lobectomy). Pneumonectomy is the removal of one lung, usually with the surrounding lymph glands. The operation is done under general anaesthetic via open surgery (thoracotomy). Surgery usually takes between one to three hours. The space left behind once the lung has been removed will gradually fill with fluid over time. The remaining lung will expand but will occupy the opposite side, and this lung will be responsible for your breathing function.



Information for Patients

What are the benefits of a pneumonectomy?

Surgical removal of a tumour and surrounding lung aims to cure you of lung cancer. Pneumonectomy may be done as an emergency, however this is a rare and lifesaving procedure that is usually carried out to control bleeding.

What does a pneumonectomy involve?

Open surgery is done with one longer cut under the shoulder blade between two ribs. The two ribs are parted to get into the chest. One rib may be cut to give more space, but ribs are not removed. At the end of surgery the two ribs are held back together with strong stitches. The muscles and skin are also stitched back together.

During surgery, you lie on your side with your arm raised. The blood vessels and airways (bronchus) leading to the lung that will be removed are identified. Special staples are used to cut and seal the blood vessels and bronchus. If the operation is being done to treat lung cancer, lymph glands will also be removed. One or two chest drains are put in at the end of the operation and are held in place with a stitch. The drains remove any fluid or air from around the lung.

When you wake up, you will have a chest drain (plastic tube) coming out of your chest, which is placed at the end of the operation and secured in placed with a stitch. This is used to monitor for bleeding or air leak. Your chest drain will be intermittently clamped and unclamped. This is to check for any bleeding. The drain is usually removed 24 hours after surgery.

After surgery, we will keep you in hospital for a few days for monitoring and observation. We advise you to sleep on your back, or on the non-operated side (**good side up**).This is to protect the remaining lung from any damage.

What are the alternatives to pneumonectomy?

Surgery gives the best chance of becoming free from cancer if you have early-stage lung cancer. You can discuss treatment options with your surgeon, your lung cancer nurse and your respiratory physician. If you do not want surgery, or are not fit enough to have an operation, other options may include:

- Radiotherapy
- Chemotherapy
- Palliative care

It is your choice whether to go ahead with surgery or choose another kind of treatment. We will respect your wishes and support you in choosing the treatment that suits your individual circumstances. You are always welcome to seek a second opinion.

What are the risks, side effects and possible complications of a pneumonectomy?

General risks of thoracic surgery apply to pneumonectomy.

Pain

It is normal to have pain after this operation. Regular pain relief will be given to control the pain and it should settle in a few weeks.

Very occasionally, pain does not settle (long lasting or chronic pain), and you may need to see a specialist at a pain clinic.

Information for Patients

Bleeding
Following chest surgery, some blood loss into your chest drain is normal. Occasionally a blood transfusion will be required, if this is needed further information will be given to you. Very few patients will need to return to theatre to control the bleeding.

Chest infection
This occurs in some patients having a pneumonectomy. The risk and severity is increased if you are a current smoker.

Physiotherapy, early mobilisation and adequate pain relief can help you to be more mobile and clear chest secretions, this reduces the risk of this occurring. If you develop a chest infection you may need extra physiotherapy, antibiotics and to stay in hospital for a little while longer.

Wound infection
Showering before your surgery, frequent hand washing and using the alcohol rubs provided will reduce this risk. Some patients will still develop a wound infection needing antibiotics and wound dressings. You may require help from the district nurses to dress the wound once you have been discharged.

Blood clots
These can occur in the legs (Deep Vein Thrombosis) and then travel to the lung (Pulmonary Embolism). The risk is greatly reduced by wearing support stockings, having daily injections of a blood thinning drug, and early mobilisation. Special massaging boots called Flowtron boots are also put on your legs during your operation.

Heart attack or stroke
This can occur during or after surgery. The risk is higher in patients with a cardiac history or undiagnosed cardiac disease. For this reason, every patient will be fully assessed before surgery.

Fast heartbeat
After lung surgery, your heart can develop a fast and irregular beat. This is more common after a pneumonectomy. This may be treated with drugs to slow down the heart.

Painful shoulder
This is quite common. It can be eased with pain relief and regular shoulder exercises.

Constipation
Painkillers often cause constipation. To help, you should have a healthy diet, drink enough fluid, take laxatives and walk around.

Disorientation
Disorientation and confusion can happen for a few days after surgery. It may be caused by strong painkillers, anaesthetic drugs, lack of sleep and the hospital ward being different from home. You should return to normal within a few days.

In addition, the following are risks that can follow a pneumonectomy:

Shortness of breath
Having one lung removed will limit how much strenuous exercise or activity you can do. If you already have lung disease there is a higher risk of being severely breathless, including needing to have oxygen at home.

Information for Patients

Hoarse voice
Some patients develop a hoarse voice following their operation. This is more common in patients whose operation is on the left side. This occurs due to vocal nerve damage, which can stop the vocal cords from working properly. On rare occasions, the damage can make swallowing food or liquids unsafe. You may need a further operation on your vocal cords to fix this (vocal cord medialisation). If you are concerned that having a hoarse voice may severely affect you, please talk to your surgeon.

Broncho-pleural fistula
A hole may form in the airway stump (bronchus), this is called a broncho-pleural fistula. This is most common with an infection. You will need to have a chest drain re-inserted and antibiotics. You may need another operation to fix the hole.

Acute kidney injury
After surgery, the kidneys sometimes do not work well. This is usually temporary and improves with fluids.

Respiratory failure
Shortness of breath may be severe enough to require help from a ventilator machine. This can be via a face mask with you fully awake, known as non-invasive ventilation (NIV). It may also need to be via a tube in the trachea with you under sedation. This would mean that you would go to intensive care. If you need help breathing via a tube in the trachea for a longer period, it may be beneficial to have a temporary tracheostomy.

Chyle leak
This is fatty fluid leaking into the chest, it is very rare. You may require a temporary change in diet or another operation to treat this.

Post-pneumonectomy syndrome
This is rare. It consists of an excessive shift of the heart, airway and blood vessels resulting in compression and stretching of the airways and the oesophagus (food pipe).You may require another operation to get rid of the symptoms. The symptoms include increased shortness of breath, difficulty swallowing and fainting.

Death
The risk of death from pneumonectomy is 1 in 20 nationally. It is considered a high-risk operation.

What can I expect during my admission and during my recovery?

Pneumonectomy is nearly always an elective procedure. This means you will have been brought in from home for your surgery, following a preoperative assessment and workup. You will be in hospital for around 3-5 days, but possibly longer depending on how well you recover. We will monitor the level of fluid in your chest with x-rays, and we will give you advice on protecting the good lung. You will also be encouraged to mobilise and work hard with the physios to get mobile and protect your good lung.

After the procedure, you may experience some discomfort or a hoarse voice. We provide pain relief and will get you mobilising with the physio team early on.

Following surgery, sudden movements can cause discomfort due to the healing and recovery process. You may also have some muscle weakening as a result of having an operation. It is generally not advisable to drive for 4-6 weeks after an operation to allow time for healing. We advise patients to check with their motor insurance provider following surgery.

Information for Patients

On average, we expect that it will take around three months for you to return back to your usual level of activity.

If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email interpreting.service@uhb.nhs.uk.