Surgery for Pleural Effusion

Cardiothoracics

Introduction

This leaflet has been written to provide information about procedures to manage pleural effusion (fluid in the chest cavity). These procedures include pleural biopsy (taking a sample of the lining between the lungs and the chest wall); pleurectomy (removal of the pleura); and pleurodesis (inserting a chemical to prevent fluid recurrence).

We hope it answers some of the questions or concerns you may have about these procedures. It is not intended to replace talking with medical or nursing staff.

This booklet will explain the reasons for the operation, the procedure itself, the benefits, alternatives, and potential risks involved. It will also explain the care you need before and after surgery. Please feel free to ask any questions raised or not addressed by this booklet. The doctors and nurses are available to support you at this time.

What is pleural effusion?

Pleural effusion is a build-up of fluid inside the chest cavity. When sufficient fluid accumulates, the lungs will be unable to inflate properly causing shortness of breath. There are many causes of pleural effusion, and it may be necessary to have a surgical procedure to establish the diagnosis and prevent recurrence. There are three commonly used surgical options which may be used alone or in combination:

- Pleural biopsy
- Pleurectomy
- Pleurodesis.

The lungs are covered by two thin membranes called the pleura. The space between these two layers is called the pleural space.

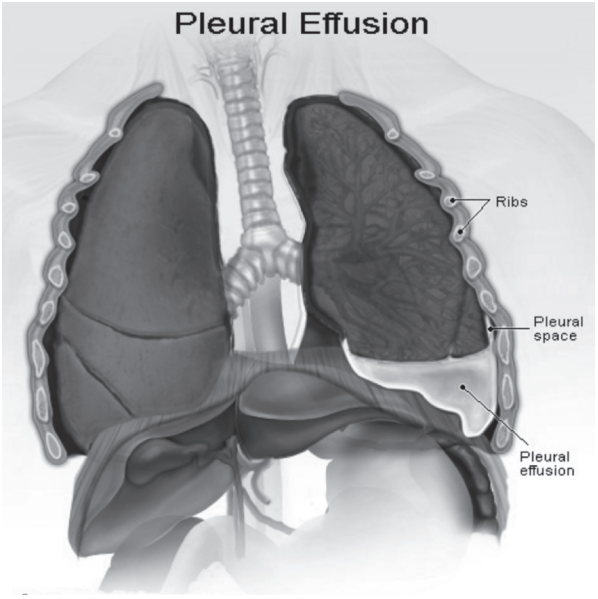
Patients are referred to a thoracic (chest) surgeon for management and / or investigation of symptoms they have been having, which may include increasing shortness of breath and sometimes pain or discomfort and general malaise.

Often patients have had a chest X-ray or CT scan that has shown fluid between the two pleura and/ or thickening of the pleura. As the fluid builds up it collapses (squashes) the lung. The surgeon is asked to drain the fluid to allow the lung to inflate, however in some patients it is not possible to get the lung fully inflated. The surgeon will also take a biopsy from the pleura to find out why the fluid has collected there.

The prevention of infection is a major priority in all healthcare and everyone has a part to play.

- **Please decontaminate your hands frequently for 20 seconds using soap and water or alcohol gel if available**
- **If you have symptoms of diarrhoea and/or vomiting, cough or other respiratory symptoms, a temperature or any loss of taste or smell please do not visit the hospital or any other care facility and seek advice from 111**
- **Keep the environment clean and tidy**
- **Let's work together to keep infections out of our hospitals and care homes.**

You will normally meet a chest surgeon at a clinic appointment to discuss the reasons for offering surgery, what is involved, and any risks associated with the procedure.



What is a pleural biopsy?

A pleural biopsy is a procedure to sample the lining between the lungs and the chest wall. It is used to establish the diagnosis following recurrent episodes of pleural effusion (accumulation of fluid). It may be used in conjunction with pleurodesis to help the surface of the lung to stick to the chest wall, in order to prevent further fluid collection.

What is a pleurectomy?

A pleurectomy is a procedure to remove the lining between the lungs and the chest wall. It is used to diagnose and treat pleural effusion to help the surface of the lung to stick to the chest wall, in order to prevent further lung collapse.

What is pleurodesis?

Pleurodesis involves inserting a fine powder (talc) into the chest to stick the lung to the chest wall.

The procedure

The operation is normally done under a general anaesthetic, although rarely in some circumstances it is done under a local anaesthetic.

The surgeon usually performs a bronchoscopy first, using a telescope to look into the windpipe and airways.

The surgeon will then make one, two or three small cuts on the chest about two centimetres long, using keyhole surgery. Using a special telescope, the surgeon will look into the pleural space and then drain the fluid off, as well as taking biopsies from the membrane (pleura), or stripping out the pleura. In some patients the surgeon will put some sterile talc into the pleural space to stick the lung to the inside of the chest to try and prevent the fluid returning.

The surgeon will need to leave one or two chest tubes in the space to drain any air and fluid after the operation. The drains will need to stay in place for about two to three days. Once the drains have been taken out the stitch will need to be removed 5 to 7 days later, by your local surgery nurse or the district nurse.

The operation usually takes 45 minutes to one hour.

The biopsies or pleura will be sent to the laboratory for analysis. This normally takes 10 to 14 days.

Changes to the planned surgery

For technical reasons, the surgeon may be unable to do your operation using the telescope, and may therefore have to extend one of the cuts or make a new longer cut to complete the operation. This is called an open pleural biopsy or open pleurectomy.

Very occasionally, if there is bleeding during the operation that cannot be controlled through the telescope, the surgeon will need to make one of the cuts larger to gain direct vision and control the bleeding.

Consent

We must seek your consent for any procedure or treatment beforehand. Your doctor will explain the risks, benefits and alternatives where relevant before they ask for your consent. If you are unsure about any aspect of the procedure or treatment proposed please do not hesitate to ask for more information.

It is your decision whether or not you have surgery. The doctors and nurses will be available to offer information, advice and support at this time, so please feel free to ask any questions and discuss any concerns you may have.

What are the benefits of having the procedure?

The procedure can help to prevent shortness of breath caused by pleural effusion, and make a diagnosis of the underlying problem.

What are the risks involved?

As with any procedure there is a small risk of complication, and this varies from patient to patient. The risks include breathing difficulties, pneumonia and bleeding.

Sometimes air can leak from around the lungs into the skin (subcutaneous emphysema) following the procedure.

What alternatives do I have?

You may choose not to have surgery. The fluid around the lung may be removed using a needle or drain inserted under local anaesthetic. However, this may not confirm the diagnosis or prevent fluid re-accumulating, so the drainage procedure may have to be repeated.

Your doctor would be happy to discuss any alternative treatments or procedures if they are applicable to you.

Preparation for surgery

You may be invited to a pre-admission clinic prior to your admission date, to prepare you for your procedure. Your health will be assessed by a nurse and/or doctor. This may involve having a chest X-ray, a heart tracing (ECG), routine blood tests and a breathing test.

Normally you will be admitted to the ward the day before the procedure. Further investigations listed below may be performed:

- Blood tests
- ECG – heart tracing
- Chest X-ray
- A full set of observations: blood pressure, pulse, oxygen levels, temperature, respiratory rate, weight and height.

All patients are screened for MRSA at preadmission, or on admission, by doing a nose, groin, and axilla swab.

If you need other tests specific to you, these will be explained.

A nurse will need to complete some paperwork with you and a doctor or nurse specialist/practitioner will take a medical history and do an examination. This may have been done in the pre-admission clinic.

The anaesthetic and surgical team will review you and confirm the details of the proposed procedure. The procedure will be explained to you again and any questions you may have will be answered.

What happens on the day of surgery?

1. To reduce the risk of infection, you will need to have a shower in an antiseptic solution the night before your operation. We will give you this special liquid soap.

2. You must not eat anything 6 hours before your operation. You can drink water up to 2 hours before surgery, unless advised otherwise by the anaesthetic and nursing staff.

3. If you take any medications the nurses will advise you which you may take before your operation.

4. On the morning of your operation you may need to have your chest, back and underarm shaved with special clippers. You will need to have another shower, or full wash in the antiseptic solution. After this you will be asked to put on a hospital gown. We will also give you compression stockings to wear, which help to prevent you developing blood clots in your legs.

Before your operation a doctor will mark the side you are to be operated on. Please let a member of staff know if this gets washed off.

We will give you a name band to wear, with your name, date of birth and hospital number on. If you are allergic to anything, you will need to wear a red band.

Please let a member of staff know if any of the information is incorrect.

Before going to theatre the nurses will complete a check-list with you. This will be repeated several times when you go to theatre. This is for your safety.

Premedication

If you have been prescribed premedication, the nurse looking after you will give you this one to two hours before the surgery, which may make you a little sleepy. Therefore, it is important that you stay in bed after you have taken the premedication or ask us to help you if you need to get out of bed.

Leaving the ward

If your family members want to wait with you before the surgery, please mention this to the ward staff.

When you go into the operating theatre, we will lock away any personal items for safekeeping until you return to the ward. Please pack your toiletries and other small items, which you may need straight after surgery, in a separate bag.

Before you go into the anaesthetic room a member of theatre staff will check your details.

What happens in the anaesthetic room?

We will check your consent form and wristband and help you onto the operating table.

We will place a small drip, usually in the back of the hand, to help you fall asleep. For major surgery, we may insert another small tube, usually in the wrist, to continuously measure your blood pressure during surgery. Both of these can be done with local anaesthetic so they are not painful.

So that we can measure your heart rate and oxygen levels in your blood, electrodes (small sticky patches) will be attached to your chest and an oxygen mask placed over your mouth. This is not painful.

After you are asleep, the anaesthetist will usually insert another drip into a bigger vein in the neck and a catheter into the bladder to drain any urine.

Once you are asleep, a breathing machine (ventilator) will support your lungs. The ventilator is connected to a tube inserted down your windpipe.

What happens immediately after surgery?

Before taking you to the recovery unit, we will wake you up and remove the tube in your windpipe. You will then receive oxygen through a face mask.

A specially trained recovery nurse will look after you, making sure that you are not in pain and that you are breathing well.

We may also take a chest X-ray while you are in the recovery ward to check that your drains are in place and your lungs are re-inflating, although this is normally done on the ward.

You may need to go to the intensive care unit overnight so we can continue to monitor your progress closely.

Will I have any pain or discomfort after the procedure?

You may feel some discomfort after the procedure but you will be given medication to help control this.

It is our aim to make patients as comfortable as possible after their thoracic surgery. It is important that we achieve this not only for your own comfort, but to ensure that we reduce the risk of complications after the operation, which can be caused by restricted breathing due to post-operative pain such as chest infections, sputum retention and poor oxygen take up into the blood stream through partially collapsed lungs.

Following a lung operation requiring video-assisted thoracoscopic surgery, the surgeon will place some local anaesthetic around the nerves, which may have been temporarily damaged by the small surgical cuts. This will give you sufficient pain relief for several hours immediately after the operation.

In the postoperative recovery room, you may also be offered a Patient Controlled Analgesic pump (PCA) to use on the ward in combination with regular pain relieving tablets. It is important, however, to let the nursing staff know if you are in pain or discomfort.

Patient Controlled Analgesia (PCA)

This system comprises a pump connected to a hand held button. When you press the button, a small amount of pain relieving drug will be delivered into your intravenous drip.

You cannot give yourself an overdose as there is a preset limit that is delivered. This way, you stay in control of your own pain relief.

This system may rarely lead to side effects such as nausea and vomiting, constipation, excessive sedation that may inhibit deep breathing, and very rarely, hallucinations.

In addition to any of the previous systems, you will be given pain relieving tablets.

What can I expect after the procedure?

After the procedure you will be taken to a recovery room in theatre and closely monitored until you are awake. You will then return to the ward where nursing staff will continue to regularly monitor your pulse, blood pressure and your breathing.

You may need to wear an oxygen mask for a few hours and you will be given fluids through a drip in your arm. Staff will inform you when you are able to eat and drink.

The evening after surgery, you will be encouraged to sit out of bed. This helps you to breathe deeply and helps your lungs to expand. You will be encouraged to sit out of bed and take frequent walks over the next few days, as this helps your lungs to expand and heal.

Your chest drain will be removed when any drainage stops and there is no air leak noted.

Leaving hospital

You will usually be able to go home as soon as your chest drain is removed, two to four days after your surgery. You must have had your bowels open before you leave hospital, as the pain relieving medication can cause constipation.

You should make provisional arrangements for transport home from hospital prior to your admission.

You may experience some minor soreness or discomfort at your wound site, which will settle within two to six weeks.

On leaving hospital, you will be given two weeks supply of pain relieving tablets to take home with you.

You should check your wound regularly for any swelling or oozing; some bruising is entirely normal. Should you develop a temperature and become unwell, you should ask your GP or practice nurse to check your wound.

If appropriate, and before you go home, you will be given a letter for the practice nurse so that she can arrange to remove any stitches you may have.

You must not drive or return to work until you have been reviewed at your outpatient appointment, which is usually about 2 weeks after discharge, and have been advised by your surgeon that it is safe to do so.

How to Contact us

Cardiothoracic Ward/ B8	**Cardiothoracic Wound Clinic / B3**
2nd Floor	1st Floor / Outpatient Department
Wolverhampton Heart and Lung Centre	Wolverhampton Heart and Lung Centre
New Cross Hospital	New Cross Hospital
Wolverhampton	Wolverhampton
West Midlands	West Midlands
WV10 0QP	WV10 0QP
Telephone 01902 694306 / 694307	Telephone 01902 307999 ext 6731 (Monday – Friday 09.00-16.00hrs)

Additional Information is available from

Patient Liaison Service (PALS)

New Cross Hospital

Tel: 01902 695362. Mobile 07880 601085

Pager:1463 (Dial 01902 307999 and ask the switchboard operator to connect you to the pager).

Website: PALS@rwh-tr.nhs.uk

English

If you need information in another way like easy read or a different language please let us know.

If you need an interpreter or assistance please let us know.

Lithuanian

Jeigu norėtumėte, kad informacija jums būtų pateikta kitu būdu, pavyzdžiui, supaprastinta forma ar kita kalba, prašome mums apie tai pranešti.

Jeigu jums reikia vertėjo ar kitos pagalbos, prašome mums apie tai pranešti.

Polish

Jeżeli chcieliby Państwo otrzymać te informacje w innej postaci, na przykład w wersji łatwej do czytania lub w innym języku, prosimy powiedzieć nam o tym.

Prosimy poinformować nas również, jeżeli potrzebowaliby Państwo usługi tłumaczenia ustnego lub innej pomocy.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਰੂਪ ਵਿਚ, ਜਿਵੇਂ ਪੜ੍ਹਨ ਵਿਚ ਆਸਾਨ ਰੂਪ ਜਾਂ ਕਿਸੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਿਚ, ਚਾਹੀਦੀ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

ਜੇ ਤੁਹਾਨੂੰ ਦੁਭਾਸ਼ੀਏ ਦੀ ਜਾਂ ਸਹਾਇਤਾ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

Romanian

Dacă aveți nevoie de informații în alt format, ca de exemplu caractere ușor de citit sau altă limbă, vă rugăm să ne informați.

Dacă aveți nevoie de un interpret sau de asistență, vă rugăm să ne informați.

Traditional Chinese

如果您需要以其他方式了解信息，如易读或其他语种，请告诉我们。

如果您需要口译人员或帮助，请告诉我们。

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