



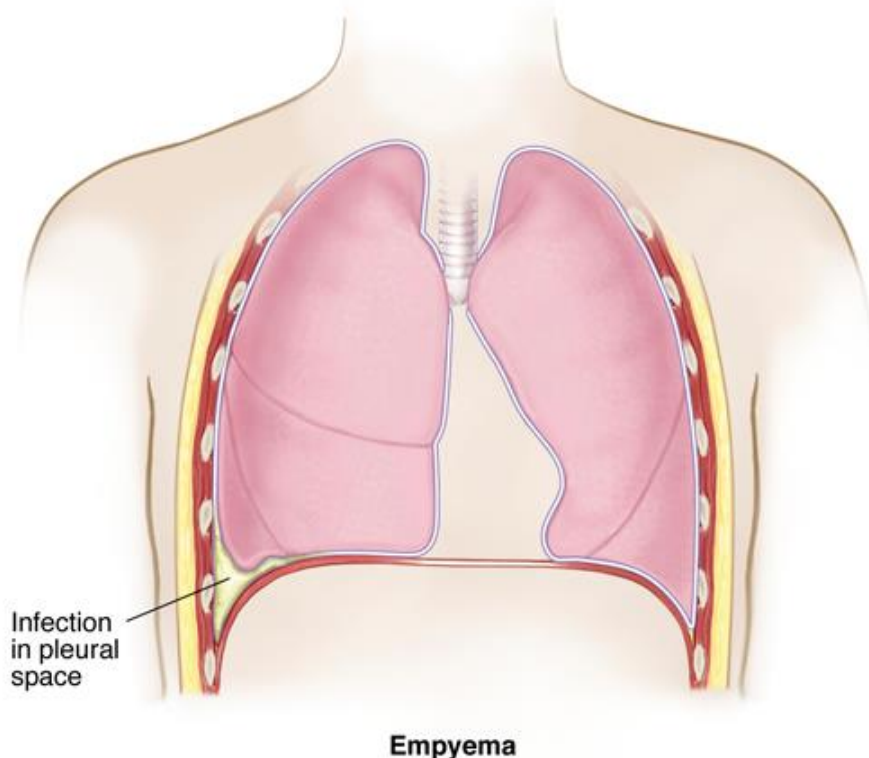
Empyema Decortication

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

We hope that this information leaflet will help to answer any questions or queries you might have about your procedure. The information provided in this leaflet will be discussed with you in full before/during your admission.

What is an empyema?

Empyema is infected fluid or pus in the space around the lung, between the lungs and the ribs (pleural space). Pneumonia is the most common cause of empyema. A small number of people who develop pneumonia develop pus around the lung. If pus stays around the lung for a number of days, the body reacts and produces strands of fibrous tissue. After two weeks, the fibrous tissue thickens and starts to coat the lung like a thick layer of orange peel. This peel traps the lung, and the lung cannot expand properly. This results in shortness of breath, fevers and feeling very unwell.



How is empyema treated?

As with pneumonia, the body may clear infected fluid with the help of antibiotics. In some instances however, this is not enough to do the job.

A chest drain is often required to get rid of the infected fluid. This is a plastic tube which is inserted into the chest in order to drain air, fluid and blood. If this does not clear the infection, an operation may be needed to remove the infectious material. This is mostly done via keyhole surgery. In some cases, this operation may not be enough to remove the infectious material, or the peel covering the lung may be too thick. In these cases, a bigger operation is performed, called decortication, to remove infected fibrous tissue and the thick peel. This requires a larger cut (called a thoracotomy), to be made.

For some, it may be better to create an opening between the ribs to allow infected fluid out of the chest. This is referred to as a window. It may be used with infections that have come back or have been very difficult to treat.

What does surgery involve?

Surgery is carried out with you fully asleep, under general anaesthetic, and can be done via keyhole surgery (VATS) or open surgery (thoracotomy). During surgery, you will lie on your side with your arm raised. Surgery usually takes between one to two hours. After the operation, you will wake up with a plastic tube (chest drain) coming out of your chest, which is connected to a special bottle. This will stay in for at least two days, in order to drain air, fluid and blood from the chest.

Keyhole surgery (VATS)

VATS stands for video assisted thorascopic surgery. For this type of surgery, up to four small cuts are made, between 1.5cm to 5cm in length, to allow the instruments and a small camera to enter into the chest. Infected fluid is removed from inside the chest, along with the infected fibrous tissue. The muscles and skin are stitched together again at the end of surgery.

Open surgery (thoracotomy)

Open surgery is carried out with one longer cut, which is made in between the two ribs, sitting just below the shoulder blade. The two ribs are spread open to get into the chest. Occasionally, one of these ribs may be cut to give more space, however we do not remove any ribs. Infected fluid is then removed and the thick fibrous tissue peel covering the lung is peeled off. This frees the lung, allowing it to expand back up. At the end of surgery, the two ribs are brought back together with strong stitches. The muscles and skin are also stitched back together.

One or two chest drains are put in at the end of the operation and held in place with a stitch. These remove any fluid or air from around the lung.

What is recovery like?

Everyone recovers at their own pace, and you may need more time to recover than you expect. This is because your body is fighting an infection, as well as healing from surgery.

You may need to continue taking antibiotics after surgery. Sometimes, you may need antibiotics for a number of weeks. In some cases, intravenous antibiotics can be given at home.

Breathing exercises and moving around will be very important to help clear the infection. After the operation, you will be encouraged to walk around the ward and perform breathing exercises. This will help with clearing the infection, breathing, and with the expansion of the lung.

The chest drain will stay in for at least two days. Your stay in hospital will depend on how you are recovering and can be quite variable.

What are the benefits of surgery?

The benefits of an operation are to remove infected material from your chest, in order to help you recover from the infection. If the infection is severe (sepsis), this operation can be life-saving. Decortication removes the fibrous peel from the surface of the lung, allowing the lung to expand so you can breathe better.

What are the risks, side effects and possible complications of empyema decortication?

The risks here are a guide; your own risk may vary. You should discuss the risks and benefits of surgery with your surgeon, especially if you are worried.

General risks of thoracic surgery apply to decortication.

Minor more common risks

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.

Bleeding

Following chest surgery, some blood loss into your chest drain is normal. Occasionally, a blood transfusion will be required, and if this is the case, further information will be given to you. In very rare instances, bleeding may be quite significant, and you will be required to return to theatre to control the bleeding.

Chest infection

This occurs in a small number of patients who have a decortication.

Physiotherapy, early mobilisation, and adequate pain relief, can help you to be more mobile and clear chest secretions, which reduces the risk. If you do develop a chest infection, you may need extra physiotherapy, different antibiotics, and may be required 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 help prevent this risk. However, some patients will develop a wound infection and as a result will need further antibiotics and wound dressings. You may require help from the district nurses to dress the wound once you have been discharged.

Air leak

Air leaking from the lung into the chest drain for a few days is common after lung surgery. Occasionally this lasts for longer, possibly weeks. A chest drain will need to be in place until this settles. You may be able to go home with the chest drain still in, and come back for regular check-ups until the air leak settles.

Major, less common risks

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, massaging Flowtron boots (used during surgery), having daily injections of a blood thinning drug, and early mobilisation.

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.

Acute kidney injury

Your kidneys may not work as well after surgery but this is usually temporary and kidney function will improve with extra fluid.

Sepsis

Sepsis arises when our body's response to infection injures its own tissues and organs. It may lead to shock, multi-organ failure, and death.

Intubation and ventilation

Shortness of breath may be severe enough to require help from a ventilator machine. This can be with a face mask, with you fully awake. It may also be via a tube in your windpipe, with you under sedation. If you need help breathing via a tube for a long time, it may be better to have a temporary tracheostomy. This is a tube put in through the neck which is removed once breathing improves.

Death

Empyema itself has a risk of death that is 15 to 20 in 100. The risk of death from the operation is two in 100 nationally, so 98 in 100 people recover from the surgery.

What are the alternatives to surgery?

Surgery for empyema is lifesaving. Antibiotics are given both if you have surgery and if you do not have surgery.

If you do not want surgery or are not well enough to have an operation, other options may include:

- Chest drain management for a prolonged period of time
- Medication via the drain to break down fibrous tissue. This is only suitable for certain patients; it works best if given early once fibrous strands are found to have developed.
- Palliative care

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

Most patients with empyema come to hospital as an emergency, and are then transferred to our hospital. Less often, you may have been asked to come in from home for a planned operation. You will usually be in hospital for a few days after your operation, depending on how you recover.

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 the operation. It is generally not advisable to drive for four-six weeks after the operation, to allow time for healing. We advise patients to check with their motor insurance provider following surgery.

On discharge home, you may be on some antibiotics. These will either be in tablet form, or given to you in a drip by a district nurse. On average, we expect that it will take around three months for you to return back to your usual level of activity. However, in more serious infections, this may take longer.

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