

Insertion of indwelling pleural (lung) catheter

Introduction

This leaflet is for patients who are to undergo the insertion of an indwelling pleural catheter for the management of their pleural effusion (collection of fluid around the lungs).

What is an ambulatory indwelling pleural catheter?

An ambulatory indwelling pleural catheter is a specially designed small tube to drain fluid from around your lungs easily and painlessly whenever it is needed. The term ambulatory means that you will be able to walk around with it in place, and indwelling means that it stays in place. It avoids the need for repeated painful injections and chest tubes every time the drainage of fluid is needed. The drainage can be performed either by you on your own or with the help of a nurse; whichever suits you. The pleural catheter is a soft flexible tube that is thinner than a pencil, which remains inside the chest and passes out through the skin. There is a valve on the outer end of the tube to prevent fluid leaking out of the tube.

Why do I need an indwelling pleural catheter?

The pleural space consists of two thin layers/membranes – one lining the lung and the other lining the chest wall. Between these layers, there is a very small space which is usually almost dry. In your case fluid has collected in this space so that the lung cannot inflate and function properly, making you short of breath. This collection of fluid is called a pleural effusion.

What are the benefits of the indwelling pleural catheter?

Draining away the fluid collection helps relieve breathlessness for a short period, but the fluid then often re-collects, making you short of breath again. While it is possible to have repeated drainage of fluid in this way, it can be uncomfortable and means many inconvenient trips to hospital. The indwelling catheter is a way of allowing fluid to be repeatedly drained without you having to come to the hospital and without you having to have painful fluid drainage procedures.

What are the alternatives to the indwelling pleural catheter?

There are several alternatives to an indwelling pleural catheter which will be discussed with you prior to any operations. This includes finding medical ways of managing your breathlessness by use of drugs such as oxygen and morphine based drugs, further aspiration of pleural fluid with a needle and syringe, and possibly an admission to hospital for a further chest drain, which you may have already experienced.

What are the risks of the operation/treatment?

In most cases, the insertion of an indwelling pleural catheter and its use in treatment is a routine and safe procedure. However, like all medical procedures, they can cause some problems. All of these can be treated by your doctors and nurses.

- Most people get some pain or discomfort from their indwelling catheter in the first week. We will provide you with painkilling medication to control this.
- Sometimes, indwelling catheters can become infected but this is uncommon (affecting about 1 in 50 patients). Your doctor will thoroughly clean the area before putting in a chest drain to try and prevent this and we will teach you how to keep your catheter clean. Tell your doctor if you feel feverish or notice any increasing pain or redness around the chest drain.
- Occasionally, drains become blocked so if it stops draining we may be able to flush and unblock the drain, and occasionally will remove it completely.

Preparing for the operation

You will need to have some blood tests before your indwelling catheter insertion to ensure you are not at a high risk of bleeding. Otherwise you should just turn up to the ward as instructed. You do not need to refrain from eating or drinking as the procedure is performed under local anaesthetic. Some patients will be given sedation as well. Please bring an overnight bag in case you are required to remain in hospital. You should take your normal medications unless you have been told otherwise.

Anticoagulation

If you are on blood thinning medications, the doctor who arranged your procedure or the Pleural Nurse should have given you specific instructions about this:

- i) If you are taking Clopidogrel, Prasugrel or Ticagrelor you should stop this 7 days before the procedure
- ii) If you are using Tinzaparin injections, this should NOT be taken the day before the procedure
- iii) If you are taking Warfarin, you will either be advised to stop a week prior with an INR blood test the day before the procedure to ensure your bleeding time is normal OR if you are converted from Warfarin to Tinzaparin injections temporarily, you will have both an INR test to ensure the bleeding time is normal AND you must not take the Tinzaparin injections the day before the procedure
- iv) If you are taking Apixaban, Rivaroxaban, Edoxaban or Dabigatran you must not take the tablets for 48 hours before

What happens on day of operation?

The tube will usually be put into your chest as a day case but you can stay overnight in hospital. After you have come to the hospital you will be met by a nurse and the doctor performing the procedure. A small cannula will be put into your arm in order to give you sedation if required. You will be asked to either sit or lie in a comfortable position by your doctor. Some sedative medication may be given through the needle in your hand to make you sleepy if required. This is not an anaesthetic and it is common for you to remember some of the procedure despite this sedative injection if given. Once you are resting

comfortably, the skin will be cleaned with an alcohol containing cleaner to kill any bacteria. This fluid often feels cold. An anaesthetic is then injected into the skin, to numb the place where the indwelling catheter will go. This can feel mildly painful, but this pain passes off quickly. Once the skin is numb, your doctor will then make two small cuts in the area and gently open a path for the indwelling catheter. This should not be painful, although you may feel some pressure or tugging. One cut is for the catheter to pass through the skin, and the second is for it to be passed into the chest. The indwelling catheter is then gently eased into the chest and the skin is stitched and a dressing applied. The procedure takes about 30 minutes once started.

What happens immediately after operation?

Following the catheter insertion you will be monitored by the nurses and the tube will be attached to a drainage bottle to remove some of the existing fluid from your chest. You will be moved to a bed within the ward area so that you recover from the procedure and allow the staff to assess whether you will be able to go home the same day or require you to stay in hospital overnight.

Planning for discharge

Provided there have been no problems, the catheter insertion is done as a day case and after a short stay on the ward you will be free to go home. Someone will need to drive you home as you may have received sedative medication and will be unable to drive yourself as the effect of the drugs can last up to 24 hours. You may also be sore once the anaesthetic has worn off making driving difficult.

Aftercare advice

Two sets of stitches will be put in when your tube is inserted. The district nurse will remove these 7-10 days after the insertion.

Initially after insertion there will be a dressing placed on the catheter and we advise you to keep this dry until the stitches are removed. Providing the site is then clean and dry, you will be able to bath and shower normally. After a month it is even possible to go swimming.

You can take painkillers if necessary after your procedure – these may be more effective if taken regularly in the first few days but you can use less as time passes if your pain settles.

Who will drain the fluid from my tube once it is in place?

Drainage of the fluid is a straightforward procedure. There are a number of ways that this can be undertaken. We will arrange for a member of our team or a district nurse to do this for you once you leave hospital. If you prefer, they will also be able to teach you, a relative or a friend, how to drain the fluid so that it can be done in the comfort of your own home without waiting for a nurse. You will be given illustrated instructions on how to do this which clearly take you through the procedure, step by step. We will make these arrangements so you will not need to organise any of this for yourself.

Indwelling pleural catheters are designed to remain in position permanently. However, sometimes the fluid drainage from the chest dries up and the catheter is no longer needed. In this situation, the catheter can be removed as a day case procedure.

How often should I drain fluid?

The rate the fluid re-accumulates varies between people and some patients need daily drainage while others require only weekly drainage or less. You can drain fluid as often or as infrequently as is needed. When your drain is inserted we will contact your local district nurses who will order catheter drainage bottles to be delivered directly to your home address. These will usually arrive within 2-3 days. It is sensible to take 2-4 bottles with you if you are ever admitted to hospital in the future to ensure that there are no delays in your pleural drainages while you are an inpatient.

Things to look out for

On discharge from hospital you will be given an information sheet detailing after care following tube insertion.

Generally, indwelling pleural catheters are very well tolerated in the long term. The main risk is infection entering the chest down the tube. This risk is minimised by good catheter care and hygiene. The district nurse will teach you how to look after your catheter. You should seek medical advice if you get symptoms of infection or if your drain shows signs of infection. Our pleural nurse, Annabelle LeBon can be contacted if you have any concerns or queries- please see numbers below.

If you have cancer, sometimes cancer tissue can affect the area around the indwelling catheter. Please let your doctors know if you develop a lump, or any pain, around your catheter in the weeks after it is inserted. If this problem does develop, your doctor will advise you on appropriate treatment.

Contact information

If you are experiencing any problems then please contact:

- Annabelle LeBon, Pleural Nurse – 07799 072517 (Mon-Fri 9am-5pm)
- Kennet Ward – 0118 322 7419 (Mon-Fri 9am-5pm)
- The Department of Respiratory Medicine – 0118 322 8296 (Mon-Fri 8am to 5pm)
- For **urgent** issues out of hours, contact NHS 111 for advice

Further information

- Pleural Disease Guidelines 2010. British Thoracic Society Pleural Disease Guideline 2010. Thorax, Vol 65, Suppl 2
- Rocket Medical: <http://sales.rocketmedical.com/products/indwelling-drainage-catheters>

More information is available on the Trust website: www.royalberkshire.nhs.uk

This document can be made available in other languages and formats upon request.

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