Patient Information

Royal Devon University Healthcare
NHS Foundation Trust

Indwelling Pleural Catheter

Introduction

This Leaflet provides information on the procedure and management of Indwelling pleural catheters. It aims to provide a base of information but please have a conversation with your Lung Clinical Nurse Specialist on 01392 402168 if you have any further questions.

What is a pleural effusion?

A pleural effusion is fluid in the space around the lung. The lung is wrapped in a membrane called "pleura". This membrane also lines the inside of the rib cage. The space between the membranes is called the "pleural space". It is normal to have a small amount of fluid in this space, usually around 20ml.

In your case, fluid has collected in this space making you short of breath. The fluid weighs heavily on the diaphragm (the main breathing muscle, separating your chest and abdomen) which makes it feel difficult to breath.

What is an Indwelling pleural catheter?

An Indwelling pleural catheter (IPC) is a semi-permanent drain which is used to drain pleural effusions easily and painlessly. It is a small, flexible, silicone tube with many drainage holes which is inserted into the pleural space of patients with recurrent pleural effusions. The tube is then tunnelled under the skin to hold it in place and keep the area as clean as possible. There is a small cuff on the tube which will be under the skin and eventually the skin will heal around this cuff and hold the tube in place.

The aim of the IPC is to:

- Relieve breathlessness
- Stop repeat admissions to hospital for multiple procedures to drain the fluid
- Improve quality of life

The tube is visible on the outside of the chest and when it is not in use it can be curled up to sit comfortably under a gauze pad and waterproof dressing. The nursing team then remove the dressing and attach a suction drainage bottle to the tube to drain the fluid away. The bottle is then removed and a new dressing applied so that normal daily activities can be resumed.

How is the Indwelling pleural catheter inserted?

It is usually inserted by a Respiratory (Lung) Doctor in the endoscopy unit and is a day case procedure. Sometimes the procedure takes place in the radiology department. Patients need to have a blood test and a recent chest X-ray before the procedure.

During the procedure you will be asked to either sit or lie in a comfortable position by your doctor. You will have an ultrasound examination of your chest prior to the catheter insertion.

Once you are in a comfortable position the skin will be cleaned with a sterile cleaning fluid to kill any bacteria; this fluid often feels cold.

A local anaesthetic is then injected into the skin to numb the area where the catheter will be placed. This can feel mildly painful, but the pain should ease off quickly.

Your doctor will then make two small cuts in the numb area of skin and gently insert the catheter. This should not be painful, although you may feel some pressure or tugging. You will then have a chest X-ray after the procedure to check the tube placement before discharging you home.

You will be sent home afterwards with enough drainage bottles and equipment for a week.

Are there any risks with Indwelling Pleural catheter insertion?

In most cases, the insertion of an IPC is a routine and safe procedure. However, like all medical procedures there can be complications, although these can be treated by your medical team.

- Most people get a degree of pain from their catheter in the first week after insertion. Simple pain killers usually control this.
- Sometimes IPC's can become infected but this is uncommon (affecting about one in 50 patients). Please tell your GP or community nurse if you feel feverish or notice any increasing pain or redness around the chest drain site.
- Very rarely, during its insertion, the IPC may accidentally damage a blood vessel and cause serious bleeding. This probably only affects about 1: 500 patients. Unfortunately, if it does happen it can be a serious problem which may require surgery to treat the bleeding. Your medical team will do everything they can to avoid this problem.

Preparing for insertion of IPC procedure

Do not eat or drink anything for 6 hours before the procedure. You can have small sips of water up to 2 hours before the procedure.

Please do not smoke before the procedure – this can reduce the amount of oxygen your blood can carry and can also affect wound healing.

We will need to know all your medications before the procedure, including over the counter medications. We temporarily stop blood thinners before the procedure to reduce the risk of bleeding. You should take all your other medications as normal on the morning of the procedure; these should be taken with a sip of water at least 2 hours before you arrive.

Blood thinning medications

Medication	Instructions
Warfarin	Usually stopped 5 full days before the procedure. You will need an 'INR' blood test 1-2 day before the procedure to make sure it is below 1.5, otherwise we may need to delay your procedure. Some patients need to have a blood thinning injection in the period off warfarin, your doctor will discuss this with you if it is required.
Aspirin	Do not take on the morning of the procedure
Clopidogrel Dipyridamole Ticagrelor	Usually stopped 7 full days before the procedure
Apixaban Dabigatran Rivaroxaban Edoxaban	Please stop 2 days before the procedure
Dalteparin (Fragmin) injections	Please stop 1 full day before the procedure

How is the indwelling pleural catheter managed at home?

On discharge from the hospital the endoscopy nurses will make a referral to the community nursing team, they will arrange to visit you at home and will ensure the drainage equipment is supplied.

Often the IPC is inserted on a Friday and the nurses will visit for the following 2 weeks on a Monday, Wednesday and Friday. They will follow the procedure of accessing the drain. After this initial 2 weeks they will use their clinical judgement to decide how often the drainage needs to happen, if there is less fluid to be drained then this can reduce to a two weekly visit and so on.

How long does the drain remain in?

The IPC is designed to be a long-term answer for a pleural effusion, and can remain in place as long as is necessary. If the fluid stops draining because the lung has re-expanded sufficiently then the catheter can be removed. This can be different lengths of time for each individual patient. If there are issues with the tube blocking or becoming infected then the tube can also be removed. The removal is done by a member of the respiratory team as a day case procedure under local anaesthetic.

Drainage procedure

The nurse will remove the dressing and using a sterile technique remove the protective cap and attach a suction drainage bottle to the tube to drain the fluid away. Some people require 2 bottles. Sometimes people can feel the sensation of the fluid draining. This can be uncomfortable as the fluid is removed and the lung re-expands. The intention of the IPC is to improve symptoms and quality of life. If you find the procedure painful let the nurse know and they should contact the respiratory department for advice as it might be that removing the fluid is no longer beneficial and your symptoms are best managed in another way.

Every time the nurse drains the IPC they will write down:

- The date and time
- The amount of fluid drained
- The colour of the fluid
- Any symptoms you have (such as discomfort)

This will help the medical team to develop a drainage schedule that's right for you.

Are there any risks associated with long term indwelling pleural catheter use?

Generally IPC's are very well tolerated in the long term.

- The main risk is infection entering the chest along the tube. This risk is minimised by good catheter care and hygiene. The community nurses will advise you on how to look after your catheter.
- Sometimes cancer tissue can affect the area around the 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.
- The tube can become blocked or fractured – if this occurs then the respiratory team will review you in clinic to see if this can be salvaged, however it might be that the tube needs to be removed.
- In the first days to weeks after the drain is inserted there is a risk of the tube becoming dislodged, if the cuff (see picture) is exposed then the tube will need to be removed as it will be at increased risk of infection. Please let your nurse or doctor know if this is the case.

What colour should the pleural fluid be?

There is no single typical colour, the fluid is sometimes blood stained. We would want to know if it became a thicker consistency or yellow/green or if it was heavily blood stained. We may then need to see you. If the site of the drain becomes red or oozing please let someone know.

The skin can become irritated by the waterproof dressing please let your community nurse know and an alternative can be source.

Can you fly with an indwelling pleural catheter?

Yes it is possible, please discuss this with the medical team, as they may need to provide a letter for the airline.

Can I drain the indwelling pleural catheter myself?

It is possible for the nursing team to support the you or a relative to learn how to complete the drainage to help promote independence, please discuss this with your nursing team.

Can I wash and shower normally?

We would advise that you keep the area dry for the first week after insertion of the IPC. After this, providing the site is clean and dry, you will be able to bath and shower normally. If this dressing does get wet please seek the advice of your community nurse. After a month it is even possible to go swimming if it is healing well, but please discuss this with your community nursing team.

When can the indwelling pleural catheter be removed?

The IPC can be removed when no more than 50mls has been drained up to a week apart. The community nurses can get in touch with the hospital team when the drain is ready to be removed. The drain is removed as a day case procedure in the endoscopy department.

Further information

If you would like any further information about this procedure please telephone the Lung Nurse Specialists on 01392 402168 or 07917 595123.