

# Diagnostic and therapeutic pleural aspiration

## Introduction

This leaflet is for patients who are to undergo a diagnostic or therapeutic pleural aspiration.

## What is a pleural aspiration?

A pleural aspiration is the removal of fluid from around the lung. A diagnostic pleural aspiration takes a small volume (usually 20-100ml) of fluid to allow tests to be performed on the fluid. A therapeutic aspiration removes a larger volume (up to 1.5 litres) to improve breathlessness in addition to allowing tests to be performed on the sample taken.

## Why do you need a pleural aspiration?

The pleural space consists of two thin 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. If there is a significant volume of fluid then the lung cannot function properly making you short of breath. A **diagnostic pleural aspiration** allows a sample to be taken to determine why this fluid is there and plan treatment. A **therapeutic aspiration** also removes a larger volume of fluid to improve your breathing.

## What are the benefits of the pleural aspiration?

Removal of fluid aims to improve your breathlessness. Sampling the fluid also allows it to be analysed in several ways to determine why the fluid is building up.

There are several possible reasons for this fluid to build up including:

- Infection including pneumonia or occasionally TB.
- Cancerous deposits in the lining of the lung.
- Inflammatory processes (such as related to Rheumatoid Arthritis).
- As a result of processes in other organs such as heart failure or kidney disease.
- Spontaneous build-up of fluid after heart surgery.

## What are the alternatives to a pleural aspiration?

A pleural aspiration is the simplest way of obtaining a sample of fluid. Alternatives to this will be discussed in clinic at the time of requesting the procedure. These will depend upon the suspected cause of the fluid, but vary from doing nothing, which would not allow us to understand why the fluid is there or improve your breathlessness, to keyhole surgery. Your doctor may have other information such as a CT scan result which may allow other options.

## What are the risks of the aspiration?

This is a very safe procedure with few risks. The doctor doing the procedure will discuss the risks at the time when asking you to sign the consent form. The more common side effects of the procedure are:

- Pain – sometimes the injection of the local anaesthetic can be sore and there can be a slight “catch” as the needle enters through the lining of the lung (this area can be difficult to numb).
- Bleeding – there is a low risk of bleeding caused by the needle used for the sample. The place that is chosen for the sampling is intended to minimise risks of bleeding.
- Infection – the procedure is performed in a sterile manner to minimise any risk of infection in the fluid.
- Organ puncture – this is when the needle used accidentally catches the lung itself or another organ, such as the liver or spleen. This risk is reduced by using the ultrasound at the time to locate the best site for sampling. The risk of this is therefore very low.

## Preparing for the procedure

You will need to have some blood tests before your aspiration to ensure you are not at a high risk of bleeding. A pleural aspiration is a day case procedure and is usually performed in a procedure room on Castle Ward (South Block, Level 2).

One of the team will contact you from Castle Ward to arrange a date and time for this to happen. If you require transport please let them know.

You can drive yourself, although it is often best to have someone bring you and be with you. Parking is available in the multi-storey car park on Craven Road.

You can eat and drink as normal for this procedure and should also take your regular medications unless specifically instructed by team.

## 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 the procedure?

The doctor performing the procedure on the day will explain the whole procedure to you and ask you to sign a consent form to ensure you are happy to have it done. A copy of the consent form will be given to you with this leaflet and we would be grateful if you could bring it along with you.

1. Firstly to identify a suitable place to take fluid the doctor will perform an ultrasound scan (jelly scan using high frequency sound) first.
2. Once a site has been identified the doctor will then clean your skin with alcohol gel which can feel cold.
3. To then numb the area the doctor will then inject local anaesthetic into the muscle in between the ribs. This can sting as it is injected, but goes numb within a minute.
4. Once the area is numb the doctor will pass a needle into the fluid and draw off a sample.
5. To perform a therapeutic aspiration (i.e removal of a larger volume of fluid) a plastic tube (similar to those used for drips) will be passed over the initial injection needle and will remain in the chest until a certain volume of fluid has been drawn off (or all the fluid).

When larger volumes of fluid are drawn off areas of the lung can start to open up again and this can cause you to cough or have a strong urge to cough. This is normal and is nothing to worry about. It is safe to cough.

### How long will it take?

The procedures themselves are relatively quick. A diagnostic aspiration alone takes about 15 minutes. A therapeutic aspiration takes longer because more fluid is being removed. This can take up to 30 minutes.

Including the time taken to perform the ultrasound scan, explain the procedure, consent you for it and take the fluid sample, the whole procedure will take approximately 45 minutes to 1 hour.

There will often be other patients having a similar procedure at the same time or occasionally more urgent or emergency patients. Occasionally these can take longer than expected and there might be an unavoidable wait for your procedure which can result you being at the hospital for longer than 1 hour.

### What happens after the procedure?

After the procedure a small dressing will be left on over the site of the fluid sample. This can be taken off after 24 hours.

You will be able to go home immediately after the procedure.

Sample results usually take 7-10 days to be processed and you will be seen in clinic with the results. If you have been referred to the respiratory team by another consultant then the results might go direct to your referring consultant.

### Aftercare advice

This is a very safe procedure with few risks and it is rare to encounter problems afterwards.

If you get any of the following:

- Pain that is worsening and not controlled by simple pain killers
- Increasing breathlessness that does not settle in the hours after the procedure

Then you should either contact your GP explaining that you have had a pleural aspiration or phone our pleural nurse, Annabelle LeBon. Alternatively contact Kennet Ward during daytime hours (see below).

### 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

More information is available on the Trust website: [www.royalberkshire.nhs.uk](http://www.royalberkshire.nhs.uk)

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

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