



Royal Papworth Hospital
NHS Foundation Trust

Diagnostic bronchoscopy including EBUS*

Patient's guide and
agreement to consent form

*Endobronchial Ultrasound

This information booklet has been prepared to help you and your relatives understand more about your planned procedure. It also gives you general information about what to expect from the time of your admission to your discharge home from Royal Papworth Hospital, and some practical advice on what to do when you get home.

Reasons for needing a bronchoscopy or EBUS (Endobronchial Ultrasound)

A bronchoscopy is a procedure which can help to diagnose, and sometimes to treat, conditions of the airways and lungs. Usually it is performed as an outpatient or day case procedure.

There are a number of reasons why a patient may need a bronchoscopy. These may include coughing up blood, a persistent cough or an abnormal chest X-ray or CT scan. Bronchoscopy is performed routinely in patients after lung transplantation and is helpful in the diagnosis of difficult lung infections, inflammatory conditions and tumours in the lung.

Royal Papworth Hospital is also a specialist centre for more complex bronchoscopic procedures such as EBUS and auto fluorescence bronchoscopy.

What is a bronchoscopy?

A bronchoscopy is a way of looking inside your lungs, usually while you are sedated. It is a medical procedure in which a doctor passes a thin flexible telescope, called a bronchoscope, through your nose or mouth and down your windpipe into the lungs. See 'Mild complications' on page 2.

The bronchoscope may be fitted with special equipment like a miniature ultrasound probe (EBUS) which can help to guide the doctor in taking samples at the right area.

What samples might be taken?

Samples are taken in a variety of ways depending upon the circumstances and can be used to test for infections in the lung, tumours and other sorts of lung disease.

During lung washings or lavage, saline (salt water) is squirted into the airways and then sucked out again, providing a sample of the cells from the lining of the lung.

Various instruments can be passed down the bronchoscope to collect a sample of tissue:

- A thin brush on the end of a wire, used for brushing cells off the lining of the airways.
- A tiny pair of forceps is used to take little bites of lung tissue two to three millimetres in diameter. These are called biopsies.
- A fine needle is used to suck a sample of cells from lymph glands which lie next to the airways in the lungs.

In each case the sample obtained is put into preservative fluid and sent to the laboratory for testing.

What are the potential risks of having a bronchoscopy?

Overall a bronchoscopy is a safe procedure. However, as with any medical procedure there may be risks involved, which will depend upon the type of procedure being undertaken.

Mild complications

Some patients notice a sore throat or some fever and sweating about six to 12 hours after bronchoscopy. These symptoms may last a few hours and will go away without any treatment. You may also feel a bit sleepy after the procedure.

Slight bleeding from the lung can occur when biopsies are taken. You may cough some bloodstained phlegm after the procedure.

More serious complications

Occasionally, more serious bleeding happens following a biopsy but this is unusual and occurs in less than one in 100 patients.

Occasionally a chest infection occurs following a bronchoscopy. If you start to cough up yellow/green phlegm or feel especially 'chesty' in the few days following a bronchoscopy this may be a sign of a chest infection. Your GP can advise you about the need for antibiotics.

Occasionally the lung may puncture and collapse when a biopsy is taken. This may result in some pain in the chest and some breathlessness. This rarely happens during bronchoscopy unless a special type of biopsy called a transbronchial biopsy is taken. If you need a transbronchial biopsy during your bronchoscopy, the doctor will talk to you about this beforehand and explain that the specific risk to you of experiencing a puncture during the process is about one in 20 (5%). If a puncture does occur then in five out of 10 cases it heals up by itself. Sometimes you may need to stay in hospital and have a chest drain (a thin tube) inserted in between two ribs under local anaesthetic to remove any air leaking from the lung.

Very serious complications

Death from bronchoscopy is exceedingly rare, about one in 5,000. When it does occur the patient concerned has almost always been ill in hospital beforehand.

Your consultant will talk to you about the risks outlined above and how these relate to your own medical condition and health.

What are the benefits?

Your chest physician has recommended a bronchoscopy because it is felt that the benefit to you of having this test outweighs any risk. The benefit to you will be in obtaining a diagnosis of your chest problem so that the right treatment can be given. In cases where nothing abnormal is found, we can reassure you of this fact. The decision to offer you a bronchoscopy is taken carefully and with your best interests in mind.

Your admission to hospital

If you are having a series of tests you may be admitted as an inpatient to allow these to be scheduled over a number of days. If you are having only a bronchoscopy or EBUS you will be admitted to Day Ward.

Please follow the directions in the letter you are sent or in the phone call you receive on where to report on arrival at the hospital.

It is hoped that you will be fit enough to go home the same day but this is on condition that you do not drive yourself and that you will not be alone at home. Please bring with you toiletries and nightwear in case it is necessary for you to stay in overnight.

Preparation for your procedure

Your letter or phone call will advise you not to have any food in the four hours before your appointment time and only water for the two hours before your appointment.

Please bring any medication that you take with you and please do not wear any jewellery, make up or nail varnish as this will affect the monitoring equipment that we use.

Please let us know if you are taking aspirin, warfarin, heparin or any other medication to thin your blood. Please also tell us whether you have any allergies or if you may be pregnant.

What happens during the procedure?

After you have given informed consent to the procedure, you will be taken to the procedure room. The clinical staff will carry out routine checks to make sure that they are planning to do the correct procedure on the right person and that anything that might affect the procedure - for example, if you are taking warfarin to thin the blood or whether you have any allergies, has been taken account of. Monitors will be attached to your chest and finger to measure your heart rate, blood pressure and the oxygen levels in your blood.

Once everything is prepared, you will be given a sedative injection to make you sleepy, and your nose, mouth and throat will be sprayed with a local anaesthetic spray to numb them. When you are sleepy the bronchoscope is then passed either through the nose or mouth into the airways within the lungs. Most bronchoscopies last between 10 and 20 minutes; an EBUS will take a little longer, approximately 30 to 40 minutes.

Endobronchial ultrasound (EBUS)

In this procedure a special type of bronchoscope with a small ultrasound probe in its tip is used. The ultrasound permits the bronchoscopist to see through the walls of the airways to view lymph glands and blood vessels within the centre of the chest.

Samples to make a diagnosis can then be taken from the lymph glands by passing a thin needle through the wall of the airway into the lymph gland. This does not hurt. As the ultrasound bronchoscope is slightly larger than a normal bronchoscope it is usually passed through the mouth rather than the nose.

Auto fluorescence bronchoscopy

Auto fluorescence bronchoscopy is used mainly within research trials to look for signs of very early pre-cancerous changes in the airways. The bronchoscope looks exactly the same as a normal bronchoscope but it has special imaging equipment which enables the airways to be viewed with blue light of a certain wavelength. This shows up abnormalities within the airways that may be invisible under normal white light.

In all other respects the procedure is identical to a normal bronchoscopy.

By signing the consent form you are consenting to receive sedation as part of the procedure.

What to expect afterwards

- You will be collected from the procedure suite by a ward nurse who will accompany you back to the ward.
- It is likely that you will still be feeling the effects of the sedation at this stage and need help to get into your bed and to get comfortable.
- The nurse will assess you following the procedure by measuring your vital signs and will monitor any requirement for oxygen that you may have by way of a clip attached to your finger called an oxygen saturation monitor. You may receive a small amount of oxygen via nasal prongs whilst the effects of sedation are wearing off.
- It is probable that you will feel drowsy for about an hour; although people vary widely in this.
- If samples have been taken from the lungs, it is likely that if you cough up any phlegm it will be slightly bloodstained. This is because there is always a little bleeding when specimens are taken. The bronchoscopist will have made sure, however, that any bleeding has stopped before the end of the procedure, so any blood that you cough up will have already been spilt and will not mean that you are bleeding internally.
- About an hour after the end of the procedure, you will be given something to drink. By this time any numbness in your throat from the local anaesthetic should have worn off fully and you should be able to swallow normally. After two hours if you are able to drink comfortably you will be offered something to eat and allowed home.

The results of your bronchoscopy will not be available immediately. It may take several days for the specimens to be analysed. You will be given an appointment in the clinic to discuss the results with the medical team.

Care on discharge home from hospital Following treatment bronchoscopy or EBUS

It is normal to bring up streaks of blood in your phlegm following a bronchoscopy. As the biopsy site heals this should stop. If it persists please seek advice from your GP.

Here is some information you may find useful

You can eat and drink normally following your test.

Because the sedative can affect your judgement and behaviour slightly, even if you are feeling fine in yourself you should not drive, operate any dangerous machinery or enter into any legally binding agreements for 24 hours after your bronchoscopy.

Other activities we advise you not to undertake within 24 hours are the following:

- Shopping
- Heavy lifting
- Gardening
- Sexual intercourse
- Drinking alcohol

You should not attempt to return to work on the day of your bronchoscopy. If you live alone, we would recommend that you try to have a friend or relative with you in the same house until the following morning.

You should be back to your usual self within 24 hours.

Contact information

If you have any questions or problems after returning home please call Day Ward on 01223 638553. This ward is staffed Monday to Friday from 08:00 until 18:00.

Outside these hours please ring the main hospital switchboard on 01223 638000 and ask to speak to the on call doctor for the Chest Medical Unit.

If you experience symptoms of any chest pain and/or suffer shortness of breath contact your GP as soon as possible or go straight to the nearest Accident and Emergency Department.

Dial 999 if you have no one to take you.

Explain that you have been a patient at Royal Papworth Hospital and have undergone a bronchoscopy.

If you experience mild discomfort, painkillers such as paracetamol can be taken if needed.

If you are worried about any of the above please contact your GP and pass on to him the letter we gave you on your discharge from Day Ward.

Further information

For further information about bronchoscopy please see:

- www.patient.co.uk and follow the links: Information for patients and carers > Health and disease leaflets > chest/lung > bronchoscopy
- www.brit-thoracic.org.uk and follow the links: Clinical information > bronchoscopy > patient information

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A member of Cambridge University Health Partners

Author ID: Modern Matron
Department: Thoracic
Reprinted: April 2019
Review due: July 2020
Version: 3
Leaflet number: PI 109

Large print copies and
alternative language
versions of this leaflet
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