Having a Radial Endobronchial Ultrasound (EBUS)

What is a radial EBUS?

Radial EBUS is a procedure which allows the doctor to view the airways inside your lungs. A small flexible camera (bronchoscope) is carefully passed through your mouth into your lung. A specialised ultrasound probe is passed through the camera to give a high definition 360 degree view of the inside of your airway. The purpose is to identify lung lesions situated in the periphery of your lungs, using computer software (virtual bronchoscopic navigation – VBN) to help build a detailed roadmap of the small airways. In certain cases, fluoroscopy may also be employed; fluoroscopy is a medical imaging procedure that uses X-rays to show internal organs and tissues working in real time.

The doctor will use an ultrasound scanner probe to find and measure the lesion. They will then remove the ultrasound probe, keeping the bronchoscope and in some cases guide sheath in position, and insert a bronchial brush and biopsy forceps to obtain tissue samples.

Most patients have conscious sedation to relax you and make you feel drowsy. Local anaesthetic is used topically to make the procedure more comfortable.

Why do I need a radial EBUS and what are the benefits?

A radial EBUS will enable the doctor to take tissue samples to confirm a diagnosis and determine an appropriate plan of treatment as necessary. The preliminary results from tissue samples are usually available in seven days, but sometimes further tests may need to be done on the samples, which can take longer.

What are the alternatives?

Your doctor has advised you to have a radial EBUS as they feel that this is the best option for you. You can discuss alternatives that may be available to you, including the option not to have this procedure.

X-rays, scans and breathing tests give your doctors different information about your lungs. These cannot provide samples of lung tissue.

What are the potential risks and side effects?

A radial EBUS is an extremely safe procedure. The chance of anything going seriously wrong is very small. Most problems that do occur are minor and can be dealt with easily.

Potential problems from having a radial EBUS are:

- **Coughing** - this almost always settles once the local anaesthetic has worked.
- **Bleeding** from where the samples have been taken.
- **Breathlessness and breathing difficulty** - Very occasionally patients may experience some temporary breathlessness due to irritation of the voice box. Occasionally the flexible camera can cause **spasm** of the airways leading to difficulty in breathing.

- **Pneumothorax –** this can occur in between 1-2% of procedures. A pneumothorax is when air gains access to and accumulates in the pleural space which is the space between the lungs and the chest wall. This can cause chest pain and breathlessness. In most cases this will require a hospital stay and observation and will resolve. On a few occasions intervention to insert a chest drain (a narrow tube which sits between the lung and chest wall), may be necessary to allow the air to escape from the space between the lung and the chest wall.
- **Adverse effects of medications**- Although the dose of sedative used is small, some patients can become over-sedated. This can result in slowing of the breathing. This can be reversed with medication. On rare occasions, patients may have an allergic to the medication used. Should this occur the endoscopist would give medication to manage this reaction

You should have had sufficient explanation before you sign the consent form. Your signature confirms that you understand the procedure, the potential risks and side effects and want to go ahead with the procedure. Although you will sign a consent form for this treatment, you can withdraw your consent if you change your mind after signing.

What is conscious sedation?

The conscious sedation is an injection that aims to make the procedure more tolerable for you by causing you to feel relaxed and drowsy. People who choose to have it often find they cannot remember the procedure clearly afterwards. Conscious sedation is not like having a general anaesthetic, as you will still be able to hear and understand what is being said to you.

Please arrange for someone to collect you as you will not be able to drive for 24hours after the conscious sedation so will be unable to drive yourself home. Someone should stay with you for 12 hours after the procedure.

How long does the procedure take and how long will I be in the endoscopy unit?

A radial EBUS procedure usually takes approximately 60 minutes, but this will vary depending on the location of the lesion. Including time to prepare you for the procedure and recovery time, you should expect to be in the department for between two and four hours.

What should I do before I come into hospital?

For this procedure it is important that your stomach is empty. The night before your radial EBUS, **do not eat** anything after midnight. You can have a drink of water, or **black** tea or **black** coffee up to two hours before your visit to the hospital but you **must not eat any breakfast or drinks containing milk.**

- If you have asthma and take inhalers (eg salbutamol) please take them as normal in the morning and bring them with you.
- On the day of your procedure, you may take your usual medication or bring it with you and take it after the procedure if required, although we would advise medication for blood pressure is taken as usual.
- If you are diabetic, you will be given additional information advising you of specific instructions relevant to you. Your consultant will discuss your management of this with you prior to the procedure.
- If you are taking blood thinning medication (ie Warfarin, Clopidogrel) you will be given additional information advising you of specific instructions relevant to you. Your consultant will discuss your management of this with you prior to the procedure.

If you have any questions or concerns, please telephone the respiratory consultant secretaries or the endoscopy unit and speak to a member of staff.

Endoscopy Unit Conquest Hospital: 0300 131 5297
Endoscopy Unit Eastbourne District General Hospital: 0300 131 4595
Email either department at esht.endoscopypreassessment@nhs.net
Respiratory secretaries Conquest – Monday to Friday – 8.30am to 4.30pm – Tel: 0300 131 4500 ext. 734835 / 734836 / 734837 (except bank holidays)
Respiratory secretaries EDGH – Monday to Friday – 8.30am to 4.30pm – Tel: 0300 131 4814 / 0300 131 4815 / 0300 131 4816 (except bank holidays)

What do I need to bring with me?

Please wear loose, comfortable clothing. Bring:

- a list of all your medications and any allergies you may have.
- the name and telephone number of the person who will be taking you home. A responsible adult will need to stay with you for 12 hours following conscious sedation.
- your reading glasses, if required.

Please do not bring any valuables with you, as we cannot take responsibility for any losses.

What will happen when I arrive at the endoscopy unit?

Please remember that your appointment time is not the time you will have your procedure. There will be a waiting time between your admission and having your procedure, as well as a recovery period afterwards. Expect to be at the hospital for four hours.

You will be greeted by a member of the endoscopy team at the endoscopy reception, and your details will be checked. A nurse will review your medical history, medications and any allergies. Your blood pressure, pulse and oxygen saturations will be taken.

The nurse will explain the procedure to you again and you can ask questions if you need to. If you haven't already signed a consent form, you will be asked to complete one now. This is to confirm that you understand the test and want to go ahead.

A small plastic tube (cannula) will be inserted into a vein in your hand or arm, so that we can give you any medication that may be required for the procedure.

Very occasionally the doctor may recommend additional medication before the test (for example a nebulised bronchodilator for patients with severe COPD) If so, the doctor will discuss the medication with you.

Once prepared you will wait in the pre-procedure waiting room until you are collected and taken to the procedure room.

What happens during a radial EBUS?

- You will lie on a hospital trolley. In some cases, there will be an Xray machine in the room.
- Three nurses will assist the doctor and look after you during the examination.
- You will be closely monitored during the procedure, and you may be given oxygen.
- You will be given local anaesthetic spray or gel to numb your nose and your mouth and throat.
- You will be given sedation and painkiller before the procedure begins.

- The bronchoscope (a flexible tube connected to a camera) is carefully passed through the mouth into the breathing tubes in your lung.
- The endoscopist will use more local anaesthetic spray during the test to numb the vocal cords and windpipe. This will make the test more comfortable for you although it won't stop you from coughing at times.
- Any saliva in your mouth will be taken away, using a small suction tube, by the nurse caring for you.
- The endoscopist will look at the lining of the airways and use an ultrasound probe to identify the lung lesion and take some small tissue samples if necessary.

What happens after the radial EBUS procedure?

After the procedure you will be taken to the recovery area for approximately one to two hours whilst the sedation wears off. The nurses will monitor you regularly. When you are fully awake and the local anaesthetic has worn off you can have something to drink and a biscuit.

Most patients can go home one to two hours after the procedure.

How will I feel afterwards?

Your throat may feel a bit hoarse or sore for a day or two afterwards. If you have had a biopsy, you will probably cough up a few specks of blood. You can resume eating and drinking as normal and resume your usual medications. If you are taking blood thinning medication your endoscopist will provide instructions.

It's a good idea to take it easy for the rest of the day, the effects of sedation can last up to 24 hours.

- You will need a responsible adult (aged 18+) to collect you from the endoscopy unit and stay with you for at least 12 hours after your test.
- You must not drive a car/motorbike, operate machinery (including using your cooker), or drink alcohol.
- You should not look after any young children alone.
- You should not take sleeping tablets.
- You should not sign a legal document within 24 hours of having a sedative.
- We advise you to go home and rest.
- You can eat a light diet, drink as normal.
- You can take your usual medication.
- You should be able to resume normal activities 24 hours after the EBUS.

Can I expect any problems when I get home?

Serious side effects are rare, but if you develop any of the following symptoms, you need to be seen urgently by a medical professional:

- Sudden shortness of breath, painful or difficult breathing.
- Coughing up a lot of blood.

When can I return to work?

You should be able to resume normal activities the day after the radial EBUS.

Important information

The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.

Your comments

We are always interested to hear your views about our leaflets. If you have any comments, please contact the patient experience team on 0300 131 4784 or eshtr.patientexperience@nhs.net.

Hand hygiene

We are committed to maintaining a clean, safe environment. Hand hygiene is very important in controlling infection. Alcohol gel is widely available at the patient bedside for staff use and at the entrance of each clinical area for visitors to clean their hands before and after entering.

Other formats

If you require any of our leaflets in alternative formats, such as large print or alternative languages, please contact 0300 131 4434 or esh-tr.AccessibleInformation@nhs.net

After reading this information are there any questions you would like to ask? Please list below and ask your nurse or doctor.

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Reference

The following clinicians have been consulted and agreed this patient information:

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The Clinical Specialty/Unit that have agreed this patient information leaflet:
Medicine Division

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Responsible clinician/author: Amanda Stern, Clinical Service Manager, Medicine Division

MY HEALTH AND CARE RECORD

Scan the QR code or visit https://my.patientsknowbest.com/go/esht-endo to register for My Health & Care Record and join the Endoscopy team. This secure online service allows you to complete your endoscopy health questionnaire digitally and access helpful endoscopy information to support your care. View your hospital appointments, read clinical letters, check pathology results