

Ultrasound-guided bronchoscopic lung biopsy

NICE 'HealthTech guidance' advises the NHS on when and how new procedures can be used in clinical practice.

This leaflet is about when and how ultrasound-guided bronchoscopic lung biopsy can be used in the NHS. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

This HealthTech guidance makes recommendations on the safety of a procedure and how well it works. An interventional procedure is a test, treatment or surgery that involves a cut or puncture of the skin, or an endoscope to look inside the body, or energy sources such as X-rays, heat or ultrasound. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering how well the procedure works and whether it represents value for money for the NHS.

NICE has produced this guidance because the procedure is quite new. This means that there is not a lot of information yet about how well it works, how safe it is and which patients will benefit most from it.

This leaflet is written to help people who have been offered this procedure to decide whether to agree (consent) to it or not. It does not describe peripheral lung lesions or the procedure in detail – a member of your healthcare team should also give you full information and advice about these. The leaflet includes some questions you may want to ask your doctor to help you reach a decision.

What has NICE said?

The evidence shows that the procedure is good at targeting abnormal tissue in the lungs. However the procedure does produce false negative results (results which say the lesions are not cancerous, when in fact they are). NICE has said that this procedure can be offered routinely as a means of obtaining an initial biopsy sample for people with lung lesions, provided that doctors are sure that:

- the patient understands what is involved and agrees to the treatment, and
- the results of the procedure are monitored.

This procedure should be carried out by bronchoscopists with special training and guidance from a more experienced bronchoscopist.

Other comments from NICE

There is a risk of this procedure producing false negative results, so NICE has said that doctors should carry out other biopsy procedures if any negative or inconclusive results occur.

This procedure may not be the only possible treatment for diagnosing lung lesions. Your healthcare team should talk to you about whether it is suitable for you and about any other treatment options available.

Ultrasound-guided bronchoscopic lung biopsy

The medical name for this procedure is 'endobronchial ultrasound-guided transbronchial biopsy for peripheral lung lesions'.

The procedure is not described in detail here – please talk to your specialist for a full description.

This procedure can be used to try and obtain a sample of tissue in patients with lung lesions that cannot be seen using conventional bronchoscopy because they do not protrude into the bronchial tree.

These peripheral lung lesions often have no symptoms and the abnormality is detected incidentally on chest X-ray or computed tomography (CT) scanning. It is used to establish whether the lesions are benign or malignant (cancer).

With the patient under a local or general anaesthetic, a thin flexible tube (bronchoscope) with an ultrasound probe is inserted via the patient's nose or mouth into the lungs. Images are obtained using the ultrasound probe. The operator uses these images as a guide when taking samples of the peripheral lung lesions, which is done using special biopsy instruments.

What does this mean for me?

NICE has said that this procedure is safe enough and works well enough for use in the NHS. If your doctor wants to use this procedure, they should still make sure you understand the benefits and risks before asking you to agree to it. There is a risk of false negative results, so you may need to have a different kind of biopsy if the results of this procedure are negative or inconclusive.

You may want to ask the questions below

- What does the procedure involve?
- Are there alternative procedures?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the operation?
- What happens if something goes wrong?
- What may happen if I don't have the procedure?

You might decide to have this procedure, to have a different procedure, or not to have a procedure at all.

Summary of possible benefits and risks

Some of the benefits and risks seen in the studies considered by NICE are briefly described below. NICE looked at 9 studies on this procedure.

How well does the procedure work?

A study of 293 patients compared ultrasound-guided bronchoscopy with bronchoscopy on its own without ultrasound. Ultrasound-guided bronchoscopy led to a diagnosis of 79% of malignant lesions and 69% of benign lesions, compared with bronchoscopy alone, which led to a diagnosis of 55% of malignant lesions and 44% of benign lesions.

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A study of 120 patients compared patients who had ultrasound-guided bronchoscopy with those who had a different procedure called electromagnetic navigation bronchoscopy, or a combination of both. A diagnosis was possible in 69% of lesions in the first group and 59% of lesions in the second group. Where both techniques were combined, diagnosis was possible in 88% of lesions.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that key success factors are establishing an accurate diagnosis, avoiding CT-guided percutaneous biopsy procedures (that is, reducing the amount of radiation the patient is exposed to) and whether patients find the procedure acceptable.

Risks and possible problems

Five studies reported pneumothorax, which is when air collects outside of the lungs in the chest cavity. Across the studies, pneumothorax occurred in up to 8% of patients who had ultrasound-guided bronchoscopy. Pneumothorax also sometimes occurred when other techniques were used to obtain samples.

Five studies looked at bleeding, which happened in up to 6% of patients who had ultrasound-guided bronchoscopy.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that possible problems include pneumothorax, haemorrhage and the possibility of false negative results.

More information about lung cancer and other lung abnormalities

NHS Choices (www.nhs.uk) may be a good place to find out more. Your local patient advice and liaison service (usually known as PALS) may also be able to give you further information and support. For details of all NICE guidance on lung cancer, visit our website at www.nice.org.uk

About NICE

NICE produces guidance (advice) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider how well an interventional procedure works and how safe it is, and ask the opinions of expert advisers. This guidance applies to the whole of the NHS in England, Wales, Scotland and Northern Ireland. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see www.nice.org.uk/aboutguidance

This leaflet is about 'endobronchial ultrasound-guided transbronchial biopsy for peripheral lung lesions'. This leaflet and the full guidance aimed at healthcare professionals are available at www.nice.org.uk/HTG214

You can order printed copies of this leaflet from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N2125). The NICE website has a screen reader service called Browsealoud, which allows you to listen to our guidance. Click on the Browsealoud logo on the NICE website to use this service.

We encourage voluntary organisations, NHS organisations and clinicians to use text from this booklet in their own information about this procedure.

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