

## Keyhole surgery to repair abdominal aortic aneurysm

*NICE 'interventional procedures guidance' advises the NHS on when and how new surgical procedures or procedures that use electromagnetic radiation (such as X-rays, lasers and gamma rays) can be used.*

This leaflet is about when and how keyhole surgery can be used in the NHS in England, Wales, Scotland and Northern Ireland to treat people with abdominal aortic aneurysm. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

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 aortic aneurysm 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. Some sources of further information and support are on page 7.

Interventional procedures guidance makes recommendations on the safety of a procedure and how well it works. 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.



### What has NICE said?

There are still uncertainties over the safety of this procedure and how well it works. If a doctor wants to repair an abdominal aortic aneurysm using a keyhole surgery technique, he or she should take extra steps to explain the uncertainty and the likely benefits and potential risks of the procedure. This should happen before the patient agrees (or doesn't agree) to the procedure. The patient should be given the 'Understanding NICE guidance' factsheet about the procedure and other written information as part of the discussion. The patient should be told about other possible treatments, and that keyhole surgery may have to be converted to open surgery.

NICE is asking doctors to send information about every patient who has the operation and what happens to them afterwards to a central store of information at the Vascular Society so that the safety of the procedure and/or how well it works can be checked over time.

A team of experts should be involved in deciding whether the procedure is suitable for a particular patient. The team should have experience in managing aortic aneurysms, and should be able to offer alternative treatments. The procedure should be carried out by vascular surgeons trained in keyhole surgery.

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

## **Keyhole surgery to repair abdominal aortic aneurysm**

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

The aorta is the main blood vessel that carries blood from the heart. An aneurysm is a balloon-like swelling caused by a weakness in the wall of the blood vessel. An ‘abdominal aortic aneurysm’ is an aneurysm in the part of the aorta that passes down through the abdomen.

Small aneurysms may not cause any problems. If an aneurysm is large it can burst (rupture), causing internal bleeding. This needs emergency surgery and can be fatal.

Large aneurysms may be repaired to prevent them rupturing.

Sometimes a small tube can be inserted inside the aorta, passed up through a vessel in the leg, so that the aorta does not need to be cut. If this treatment is not possible, the damaged part of the aorta is removed and an artificial piece of blood vessel (a graft) is sewn in to replace it.

This can be done in three main ways, all carried out under general anaesthesia:

- Open surgery – through a large cut made in the abdomen.
- Keyhole surgery – through small cuts made in the abdomen. A camera connected to a video recorder and monitor is inserted through one of the cuts. By watching through the camera, the surgeon performs the operation using special instruments inserted through the remaining cuts.
- Hand-assisted keyhole surgery – a slightly larger cut is made so the surgeon’s hand can be used as well as the instruments.

### **What does this mean for me?**

If your doctor has offered you a keyhole surgery technique to repair abdominal aortic aneurysm, he or she should tell you that NICE has decided that the benefits and risks are uncertain. Your doctor should fully explain what is involved in having the procedure and discuss the possible benefits and risks with you. You should only be asked if you want to agree to this procedure after this discussion has taken place.

### **You may want to ask the questions below.**

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make me feel worse?
- 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 six studies on keyhole surgery techniques to repair abdominal aortic aneurysm.

## **How well does the procedure work?**

Keyhole surgery techniques make smaller wounds that heal more quickly. The studies NICE looked at compared how long patients spent in hospital after the procedure.

Three studies compared open surgery, keyhole surgery and hand-assisted keyhole surgery. The three studies had similar results. Patients stayed in hospital for about 6 days after keyhole surgery and hand-assisted keyhole surgery, compared with about 10 days after open surgery. Another study compared hand-assisted keyhole surgery with a different procedure – inserting a small tube inside the aorta, passed up through a vessel in the leg. The times in hospital were similar for both procedures – about 7 days.

One study found that patients stayed in for an average of 5 days after keyhole surgery (131 patients) compared with 7 days for hand-assisted keyhole surgery (215 patients). As one hospital did more operations, the average time patients spent in hospital became shorter.

The expert advisers said that more information is needed about whether the repair is completely successful, how often the keyhole surgery has to be converted to open surgery, how long patients spend in intensive care, patients' quality of life following the procedure and whether they need another operation.

## **Risks and possible problems**

A small number of patients died after repair of abdominal aortic aneurysm using keyhole surgery techniques. After keyhole surgery, in one study 3 out of 60 patients died, and in another study 2 out of 20 patients died. After hand-assisted keyhole surgery, in one study 1 out of 29 patients died, and in another study 1 out of 24 patients died.

One study found 1 out of 60 patients had kidney problems after keyhole surgery, while 11 out of 100 of patients had kidney problems after open surgery.

Some patients had problems with bleeding following keyhole surgery. In one study, 1 patient out of 122 had bleeding from another blood vessel in the abdomen. In another study, 1 patient out of 60 needed another operation because of excessive bleeding.

Keyhole surgery techniques took longer on average than open surgery in three studies. Long operations can have more safety concerns. The expert advisers said that possible safety concerns include death following the operation, infection and multiple organ failure.

## More information about aortic aneurysm

NHS Direct online ([www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)) may be a good starting point for finding out more. Your local Patient Advice and Liaison Service (PALS) may also be able to give you further advice and support

### 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. 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](http://www.nice.org.uk/aboutguidance)*

*This leaflet and the full guidance aimed at healthcare professionals are available at [www.nice.org.uk/IPG229](http://www.nice.org.uk/IPG229)*

*You can order printed copies of this leaflet from the NHS Response Line (phone 0870 1555 455 and quote reference N1317).*

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