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Understanding NICE guidance

Information for people who use NHS services

National Institute for Health and Clinical Excellence

Removing a kidney using single-incision keyhole surgery

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 single-incision keyhole surgery can be used in the NHS to treat people with conditions requiring removal of a kidney. 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 conditions requiring removal of a kidney 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.

What has NICE said?

There is not much good evidence about how well this procedure works or how safe it is. Any advantage for patients over conventional keyhole techniques for kidney removal is uncertain, and more information is needed on the use of this procedure for collecting healthy kidneys from donors for transplantation.

If a doctor wants to use single-incision keyhole surgery for kidney removal, they should make sure that extra steps are taken to explain these uncertainties. This should happen before the patient agrees (or doesn't agree) to the procedure. The patient should be given this leaflet and other written information as part of the discussion. There should also be special arrangements for monitoring what happens to the patient after the procedure.

Deciding which patients should have this procedure is particularly important in treating patients with cancer.

This is a difficult procedure that should only be done by surgeons who are experienced in keyhole surgery and have received special training in the procedure.

NICE has encouraged further research into this procedure. In particular, if the procedure is used to treat cancer in the kidney research should look at whether the cancer comes back in the long term. If the procedure is used for kidney donation, research should look at whether transplanted kidneys survive and how they function. NICE may review this procedure if more information becomes available.

Other comments from NICE

NICE noted that the technology used in this procedure is developing rapidly and that the use of more advanced technology may influence how well the procedure works and how safe it is.

Removing a kidney using single-incision keyhole surgery

This procedure may not be the only treatment option for kidney removal. Your healthcare team should talk to you about whether it is suitable for you and about any other treatment options available.

The medical name for this procedure is ‘single-port laparoscopic nephrectomy’.

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

A kidney may need to be removed if it is affected by cancer or irreversibly damaged, or if it is being donated for transplantation. It can be done as an open operation or through ‘keyhole surgery’ using several small incisions (laparoscopic). The single-incision procedure that NICE has looked at aims to produce less scarring and discomfort, and reduce recovery time compared with conventional keyhole kidney removal by using only one small cut.

The procedure is carried out with the patient under general anaesthetic. Usually, a specially designed system is used to insert multiple instruments through a single cut in the navel area, through which the kidney is cut away and removed, usually in a small bag. In some cases in women it may be removed through the vagina. If the kidney is not intended for donation, it may be cut into small pieces to make removal easier.

What does this mean for me?

If your doctor has offered you single-incision keyhole surgery for kidney removal, he or she should tell you that NICE has decided that the benefits and risks are uncertain. This does not mean that the procedure should not be done, but that 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 should be given written information, including this leaflet, and have the opportunity to discuss it with your doctor before making your decision.

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?

Summary of possible benefits and risks

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

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?

In a study of 50 kidney donors who had the single-incision or standard (multiple-incision) keyhole surgery, the patients marked their pain scores out of 10 at 96 hours after the procedure. The patients who had the single-incision procedure had an average score of 1.24 compared with an average score of 2.08 in those who had the standard procedure.

In a study of 57 patients, patient-reported pain scores were significantly lower for the first 3 days after the single-incision procedure compared with the standard procedure. There was no significant difference in the use of painkillers between the two groups.

Return to normal activities took an average of 11 days in patients who had the single-incision procedure compared with 14 days in those who had the standard procedure in a study of 27 patients. In a study of 35 patients, those who had the single-incision procedure returned to work within 18 days compared with 46 days for those who had the standard procedure. Patients who had the single-incision procedure also had a shorter time to complete physical recovery (29 days versus 83 days).

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 the success of the procedure could be measured by reduced scarring and, when used to treat kidney cancer, by the absence of new or recurrent tumours.

Risks and possible problems

In a study of 17 single-incision procedures in healthy kidney donors, 1 of the kidneys needed to be removed from the recipient after transplantation because of a blood clot in the donor kidney.

A study of 18 patients who had the single-incision procedure reported damage to the bowel and diaphragm in 1 patient each. In both cases, the damage was repaired without the need for further cuts to be made.

Two single-incision procedures in a study of 62 patients needed further cuts to be made (conversion to standard procedure). In 1 patient, this was done to help remove the kidney. In the other patient, whose kidney was removed along with part of its ureter (the tube that carries urine from the kidney to the bladder), conversion was done to control bleeding. In a study of 12 patients, the single-incision procedure was converted to the standard procedure in 1 patient with abnormally connected tissues (adhesions) and bleeding requiring a blood transfusion. Two single-incision procedures for kidney and ureter removal were converted to open surgery: 1 in a patient with severe adhesions and 1 in a patient who required complete removal of lymph nodes surrounding the kidney.

In a study of 15 patients who had the single-incision procedure, 1 patient who was on long-term steroid treatment for other conditions developed severe abdominal bloating and breakdown of the wound site. Another patient developed a blockage in the small bowel 2 weeks after the procedure, which needed surgical exploration.

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 damage to the large blood vessels in the abdomen and to nearby organs, including the spleen.

More information about kidney cancer

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 kidney 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. HealthTech 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 'single-port laparoscopic nephrectomy'. This leaflet and the full guidance aimed at healthcare professionals are available at www.nice.org.uk/guidance/HTG278

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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