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Laparoscopic nephrectomy (including nephroureterectomy)

Understanding NICE guidance –
information for people considering
the procedure, and for the public



Ordering information

You can download the following documents from www.nice.org.uk/IPG136

- this booklet
- the full guidance on this procedure.

For printed copies of the full guidance or information for the public, phone the NHS Response Line on 0870 1555 455 and quote:

- N0903 (full guidance)
- N0904 (information for the public).

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About this information

The National Institute for Health and Clinical Excellence (NICE) is the independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health. One of NICE's roles is to produce guidance (recommendations) on whether interventional procedures are safe enough and work well enough to be used routinely in the NHS in England, Wales and Scotland.

This information describes the guidance that NICE has issued on a procedure called laparoscopic nephrectomy (including laparoscopic nephroureterectomy). It is not a complete description of what is involved in the procedure – the patient's healthcare team should describe the procedure offered to the patient in detail.

NICE has looked at whether laparoscopic nephrectomy (including laparoscopic nephroureterectomy) is safe enough and works well enough for it to be used routinely for the treatment of certain conditions affecting the kidney, the ureter or both. The ureter is the tube that takes urine from the kidney down to the bladder, where it is stored.

To produce this guidance, NICE has:

- looked at the results of studies on the safety of laparoscopic nephrectomy (including laparoscopic nephroureterectomy) and how well it works
- asked experts for their opinions
- asked the views of the organisations that speak for the healthcare professionals and the patients and carers who will be affected by this guidance.

This guidance is part of NICE's work on 'interventional procedures' (see 'Further information' on page 10).

About the procedure

A nephrectomy is an operation to remove a kidney. A nephroureterectomy involves removing the kidney and its ureter. Sometimes some of the surrounding tissue is also removed. These operations may need to be done if the kidney, ureter or both are severely damaged by cancer or by a non-cancerous condition such as long-term infection. The standard operations are called open nephrectomy and open nephroureterectomy. The patient is given a general anaesthetic and the kidney or kidney, ureter and surrounding tissue are removed through an opening made in the abdomen or the lower back.

The procedure NICE has looked at, which is called a laparoscopic procedure, uses keyhole surgery. The surgeon makes small openings (called incisions) in either the back or the abdomen. If the incisions are made in the back, the surgeon inflates a special surgical balloon in the area to create a space in the abdomen. The balloon is removed and carbon dioxide gas is then used to fill the area to keep everything in place while the kidney or kidney and ureter are being removed. If the incisions are made in the abdomen, the balloon is not needed.

With the surgeon working through the small incisions, the parts to be removed are cut away, put into a small bag and removed from the body.

In a variation of the procedure, a further smallish opening is made in the abdomen so the surgeon can get a hand into the abdomen and carry out some of the surgery in this way.

How well the procedure works

What the studies said

In one study of 100 people with a type of kidney cancer called renal cell carcinoma, one group had the standard nephrectomy while another group had the laparoscopic procedure. After the operation, a very high percentage of people in both groups was predicted to be free from disease in the following 5 years – 98% of those having the standard operation, and 96% of those having the laparoscopic procedure (98% means 98 out of 100 people).

Another study followed what happened in 157 patients with renal cell carcinoma who had a laparoscopic nephrectomy. It was predicted from the results of the surgery that most of the people (91%) would be free from a recurrence of the cancer in the following 5 years.

Two studies compared what happened in patients who had open nephroureterectomy with patients who had the laparoscopic version of the operation. In these studies, the likelihood of the cancer returning did not appear to depend on the type of operation the patients had.

Two studies showed that patients who had the laparoscopic nephrectomy generally needed significantly less pain relief afterwards than the patients who had the standard open nephrectomy. And another two studies showed that patients who had the laparoscopic procedure had a shorter stay in hospital than the patients who had the standard procedure (3.4 to 6.8 days for the laparoscopic procedure compared with 5.2 to 8.9 days for the standard procedure). In one study, patients who had the laparoscopic procedure took an average of 23 days to get back to normal afterwards whereas patients who had the standard procedure took 57 days.

What the experts said

The experts did not have any concerns about how well the new procedure worked if it was carried out by trained healthcare staff. But they said there was a lack of information from good-quality comparative studies about the effects of having the laparoscopic (keyhole) procedure.

Risks and possible problems with the procedure

What the studies said

In three studies that compared laparoscopic nephrectomy with the standard operation, people who had the laparoscopic procedure generally had the same number of problems as people who had the standard procedure.

Six studies reported the number of people who had to be switched from the laparoscopic procedure to the standard procedure because of problems during the surgery – the numbers went from 0 out of 54 patients (0%) in one study to 46 out of 482 patients (10%) in another study.

In a study that followed what happened during and after 482 laparoscopic nephrectomies, there were 22 cases of bleeding (5%). Further surgery was needed on 15 occasions (3%). There were three cases of damage to the bowel (less than 1%).

Problems affecting patients in other studies included:

- paralysis of the bowel so that the bowel contents didn't move through normally (this is called paralytic ileus) in 2 out of 60 patients (3%) in one study
- damage to important blood vessels in 2 out of 60 patients (3%)
- damage to the spleen in 1 patient out of 60 (2%)

- damage to the adrenal gland (which sits on top of the kidney) in 1 patient out of 60 (2%)
- urinary infection in 2 out of 157 patients (1%).

Two studies reported the number of deaths in patients who had the laparoscopic nephrectomy – in one study that included 263 patients, 2 died (less than 1%). In another study, 2 out of 157 patients died (less than 1%).

What the experts said

The experts listed the possible problems as severe bleeding (haemorrhage) from the blood vessels in the area, damage to the bowel and the need to be switched to the standard operation.

What has NICE decided?

NICE has considered the evidence on laparoscopic nephrectomy (including laparoscopic nephroureterectomy). It has recommended that when doctors use this procedure for people with specific problems affecting the kidney or ureter or both, they should be sure that:

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

In the case of patients with cancer, it's particularly important that a laparoscopic procedure is offered only if it is suitable given the person's individual condition. NICE has said that more information on how patients with cancer get on after having a laparoscopic procedure would be helpful.

Other comments from NICE

NICE has pointed out that specialist training and skills in laparoscopic procedures are important for surgeons who carry out this operation.

What the decision means for you

Your doctor may have offered you a laparoscopic nephrectomy or nephroureterectomy. NICE has considered this procedure because it is relatively new. NICE has decided that the procedure is safe enough and works well enough for use in the NHS. Nonetheless, you should understand the benefits and risks of laparoscopic nephrectomy or laparoscopic nephroureterectomy before you agree to it. Your doctor should discuss the benefits and risks with you. Some of these may be described above.

Further information

You have the right to be fully informed and to share in decision-making about the treatment you receive. You may want to discuss this guidance with the doctors and nurses looking after you.

The NICE website (www.nice.org.uk) has further information about NICE, the Interventional Procedures Programme and the full guidance on laparoscopic nephrectomy (including nephroureterectomy) that has been issued to the NHS. The evidence that NICE considered in developing this guidance is also available from the NICE website.

NICE has issued guidance on laparoscopic live donor simple nephrectomy (www.nice.org.uk/IPG057publicinfo).

If you have access to the internet, you can find more information on conditions affecting the kidney on the NHS Direct website (www.nhsdirect.nhs.uk).

You can also phone NHS Direct on 0845 46 47.

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