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Laparoscopic liver resection

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/IPG135

- 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:

- N0893 (full guidance)
- N0894 (information for the public).

National Institute for Health and Clinical Excellence

MidCity Place
71 High Holborn
London
WC1V 6NA

www.nice.org.uk

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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 liver resection. It is not a complete description of what is involved in the procedure – the patient's healthcare team should describe it in detail.

NICE has looked at whether laparoscopic liver resection is safe enough and works well enough for it to be used routinely for the treatment of some types of cancer and non-cancerous conditions affecting the liver.

To produce this guidance, NICE has:

- looked at the results of studies on the safety of laparoscopic liver resection 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 laparoscopic liver resection

The procedure that NICE has considered is an alternative to a standard operation called open liver resection, in which a part of the liver that contains a single area of cancer or a non-cancerous tumour or cyst is removed. One of the common reasons for having liver resection is a 'secondary cancer' that's spread to the liver from the bowel. This type of surgery is not usually suitable for people who have what's known as 'primary cancer' in the liver (cancer that starts off in the liver). This is because there are usually several areas of cancer, and the whole liver may be unhealthy, so it would not be possible to leave enough healthy liver for it to work properly.

For an open liver resection, the surgeon makes a fairly large opening in the skin of the abdomen and the operation is carried out through this opening. The new procedure NICE has looked at involves using keyhole surgery instead. Carbon dioxide gas is put into the person's abdomen to 'inflate' it so that it is easier to perform the surgery. Several small openings are made in the skin for the specialised surgical equipment. The section of liver is removed and placed in a small bag, which is removed from the body through a small opening made near the belly button. There are several different ways of sealing the cut part of the liver that's left in place: heat could be used, or special swabs designed to stop bleeding, or a type of natural glue may be used.

In a variation of this keyhole procedure, an extra opening is made so the surgeon can place their hand, as well as the surgical instruments, into the abdomen and carry out some of the procedure in this way.

How well the procedure works

What the studies said

In one study that compared patients who'd had the standard open surgery with patients who'd had the keyhole surgery, there were no differences between the two groups in the length of time patients lived or were free from the liver disease after the surgery.

Five studies, with a total of 217 patients with cancer in the liver, looked at the amount of healthy liver removed in the new procedure compared with the standard open surgery. The part of the healthy liver that's removed together with the cancer is called the resection margin. It's important to remove enough of a margin to be sure that all the cancer has been removed. These studies showed that more or less the same resection margin was removed in both types of surgery.

Four studies showed that patients stayed in hospital for a shorter time after having the keyhole surgery than after the standard surgery. The average stay in hospital was between 4 and 15 days for patients who had the keyhole surgery, and between 8 and 22 days for patients who had the standard surgery.

What the experts said

The experts said there were concerns that the resection margin removed using the new procedure might not be big enough to be sure that all the cancer had been removed. So there might be a higher risk that the cancer would return with the new procedure.

Risks and possible problems with the procedure

What the studies said

The studies gave details of the numbers of patients whose operation had to be changed to the standard open surgery part way through the new keyhole procedure. The numbers went from 0 out of 30 patients (0%) in one study to 2 out of 13 patients (15%) in another.

Some studies reported how many patients needed a blood transfusion during the new procedure. The numbers went from 0 out of 18 patients (0%) in one study to 4 out of 30 patients (13%) in another.

Other reported problems were:

- chest infection, which affected 2 out of 13 patients (15%) in one study
- liver failure (where the liver stops working properly), which happened in 1 patient out of 13 (8%) in one study
- ascites (a build-up of fluid in the abdomen), which happened in 1 patient out of 13 (8%) in one study
- a specific lung problem called atelectasis, where part of the lung doesn't work properly – this happened in 1 patient out of 13 (8%) in one study
- leakage of bile out of the bile duct (bile is fluid made by the liver, stored in the gallbladder and sent to the intestine to help with the digestion of fats) – this happened in 1 patient out of 21 (5%) in one study.

What the experts said

The experts said that the possible problems included death from uncontrollable bleeding (haemorrhage), leakage of bile, gas bubbles in the blood, blood clots in the deep veins and infection.

What has NICE decided?

NICE has considered the evidence on laparoscopic liver resection. It has recommended that when doctors use it for people with specific types of cancer or non-cancerous conditions in the liver 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.

NICE has also recommended that the healthcare team that assesses whether the procedure is a suitable option for a particular patient should include different types of health professional with different areas of expertise. NICE has pointed out that specialist training and expertise is needed to do this procedure.

What the decision means for you

Your doctor may have offered you laparoscopic liver resection. 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 liver resection 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 liver resection 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 other procedures for liver cancer:

- radiofrequency ablation of hepatocellular carcinoma (www.nice.org.uk/IPG002)
- radiofrequency ablation for the treatment of colorectal metastases in the liver (www.nice.org.uk/IPG092)
- selective internal radiation therapy for colorectal metastases in the liver (www.nice.org.uk/IPG093).

NICE has also published a cancer service guideline on 'Improving Outcomes in Colorectal Cancers' (www.nice.org.uk/csgcc).

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

You can also phone NHS Direct on 0845 46 47.





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