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### LAPAROSCOPIC CHOLECYSTECTOMY

This general guide is designed to provide background information to your laparoscopic cholecystectomy. It aims to supplement verbal discussion, to answer common questions and to be readily available as an *aide memoir*. It cannot cover in detail every aspect of your individual operation and may not deal with some areas that are of particular concern to you. These can be dealt with individually.

You should feel free to ask about any aspect of your care. All your questions will be answered fully, honestly and in as much detail as you wish. In the heat of the moment it is easy for questions that you intended to ask to slip from your mind. You should note on paper any questions that you may have.

Further information is available at the web site above. This site also provides links to other sites that may provide additional information.

#### **What is involved?**

The aim of the operation is to remove the gallbladder and the gallstones that it contains. A small incision is made near the umbilicus (belly button) and a telescope inserted. Once the inside of the abdomen has been examined, three other tubes (0.5 or 1.0 cm in diameter) will be inserted. Working with long instruments, a telescope and television camera the gallbladder will be resected and retrieved out to the abdomen. During the operation an attempt will be made to perform an X-ray (on-table cholangiogram) of the tube (the common bile duct) linking the liver to the small bowel. This is to ensure there are no gallstones remaining. The skin incisions will then be closed.

#### **Before the operation.**

It is important that we know every medical issue that might affect you. What may appear unimportant to you may be essential for us to know. In particular we need to know all the drugs you are taking. You should bring them to the hospital in their original packet. Unless advised specifically to the contrary you should take all your drugs up to and including the morning of surgery. The exception to this is blood thinning agents, such as warfarin, and diabetic drugs. These require special arrangements. Stop any aspirin, or aspirin like drugs, 10 days prior to surgery.

The anaesthetist will assess you and will discuss the various ways of controlling post-operative pain (see below). Prior to the operation you may be given a bowel preparation to empty and clean the bowel.

#### **Pain relief.**

Proper pain relief is very important for both holistic and physiological reasons. Your post-operative recovery will be slower if you do not have adequate pain relief. Patients often have an understandable reluctance to take pain relieving drugs. This is a mistake and may

increase post-operative complications. The principal that underlies all methods of pain relief is that the drugs work best if you anticipate the pain. A small quantity of the drug taken regularly (even if pain free at that time) will work better than waiting for the pain to occur and then taking a larger dose.

After the operation you may require several injections to provide you with pain relief, but after that adequate pain relief can normally be achieved by simple oral medication. Regular panadol, regardless of whether you have pain or not, should be used to provide background pain relief. Additional, stronger pain killers and/or anti-inflammatory drugs should be taken on top of the Panadol for break through pain. Many stronger pain relieving drug contain morphine and this will tend to make the stool hard. You may need to take a laxative such as lactulose to counteract this. Drink plenty of water. Anti-inflammatory drugs can irritate the stomach and should be taken with food. Normally they can be stopped after five days.

### **Immediate post-operative recovery**

Most patients will be up and out of bed later the same day. The vast majority remain in hospital for one night only and go home the next day.

### **Bathing and showering.**

It is quite safe to get your wound wet with a shower or quick bath immediately after your operation. However, long soaking baths with a Jeffery Archer novel should be avoided for at least three weeks as the wound will become soft and the scab may become infected. Adding salt to the bath will not help heal the wound and may make your skin dry and tight. After washing, pat the wound dry with a clean towel. A bath mat helps prevent slipping and a towel hooked around the bath taps can be a helpful lever when you try to get out. It can also be reassuring to have someone else in the house the first time you have a bath, even if you do not need help.

### **Dressings and stitches.**

You should try and keep the dressings on the wound for two or three days. If they become dirty or start to fall off they can be removed and it is not normally necessary to cover the wound. All the original dressings should be removed no later than the third day. A light dressing to protect the wound from clothes *etc* may be worn. The skin stitches will be under the skin and do not have to be removed. The wounds will be uncomfortable for four or five days, but after seven days most patients find they have minimal discomfort.

### **Sleep.**

Changes in your routine, restricted movement, lack of exercise and wound discomfort will interrupt your normal sleep pattern or wake you during the night. Uninterrupted sleep is more valuable than 'cat-napping' so you may find it helpful to take a pain killer before you go to bed. You can resume sexual activity when this feels comfortable.

### **Work.**

Your return to work depends on many factors, including your occupation, age and general health. The single most important factor that will determine your return to work is pain. If you feel comfortable doing a particular activity then it is very unlikely you will do any harm. In general it is sudden, unplanned movements that cause problems.

As a guide patients with sedentary work can return to work after one week (two to three weeks after an open cholecystectomy). If you have a manual occupation you will normally be able to return to work after one to two weeks (four to six weeks after an open

cholecystectomy). After an open cholecystectomy it will take six weeks to be 100% recovered.

You can resume exercise as guided by discomfort. If you use pain as a guide it is almost impossible to 'over exercise' yourself to the extent that you damage the surgical area. When you return to exercise do not do it in a competitive environment until you feel you can cope.

### **The wound.**

A major concern to patients is that they will strain the wound and that it will rupture. With today's suture materials and a mesh this is very unlikely. On the very few occasions that a wound does rupture it will be before you leave hospital. This would require an operation to repair the rupture. Once you have gone home a rupture is almost unheard of. If you 'over do it' the worst that will happen is that the wound will be very sore.

Wounds progress through several stages of healing. You may experience:-

- unusual tingling, numbness or itching sensations.
- a slightly hard or 'lumpy' feeling as new tissues form.
- pulling around the stitches or staples as the wound heals.

This is normal. Do not pull at any scabs as they act as a natural dressing and protect the new skin underneath. They will fall off when no longer required. You should seek help if any of the following occur:-

- the wound pain increases
- the wound becomes more reddened or swollen
- there is any discharge from the wound.

### **Surgical trainees**

Some patients may have part of their laparoscopic cholecystectomy undertaken by a surgical trainee. A trainee performing a laparoscopic cholecystectomy is normally, but not always, under the direct supervision of the consultant. It is important that, as part of their training, trainees gain independent experience whilst consultant cover is still immediately available. There is a substantial body of surgical literature that shows the outcome of operations undertaken by properly supervised trainees is no worse than those performed by the consultant. This literature includes laparoscopic cholecystectomy.

### **What can go wrong ?**

Laparoscopic cholecystectomy is an intermediate, but intra-abdominal, operation. The table below summarises the potential risks and complications. It is not intended to alarm as most patients will not have any complications. However, it is important that you appreciate that surgery does carry risk and complications can and do occur. Although everything possible will be done to prevent the development of any complications, it is only possible to reduce, not eliminate, these events. This table is not exhaustive and if you have any concerns you should ask before you sign the consent form.

The majority of complications tend to occur in two groups. The first group are a direct effect of that particular operation. There are a number of specific complications related to laparoscopic cholecystectomy.

- About 5% of laparoscopic cholecystectomies cannot be completed using the laparoscopic technique and the abdomen has to be opened so that the operation can be concluded as an open procedure. This is known as 'conversion'. The reasons for conversion vary, but normally occur because the surgeon is not able to confidently identify the anatomy. This occurs because the television gives a two dimensional picture, whereas normal sight is three dimensional. Occasionally conversion may be required because of

technical problems, such as bleeding. The presence of multiple stones in the common bile duct on the intra-operative cholangiogram may be an indication for conversion. If your operation is converted your post-operative recovery will be substantially prolonged. You will be in hospital for five to seven days and will not be able to return to normal activity for three to four weeks. It may be up to three months before you really feel like you have never had an operation. Although only a small minority of operations are converted, you should make provisional plans should conversion be required.

- Bile in the gall bladder drains *via* the cystic duct into the common bile duct. When laparoscopic cholecystectomy first commenced the common bile duct was injured more frequently than during traditional open surgery. Injury to the common bile duct is a serious complication that may have long term sequelae. The causes of common bile duct injuries are now much better understood and the risk of damage is now much less, but it still occurs in about 1 in 200 - 300 laparoscopic cholecystectomies. Although this risk is small, it is about double the injury rate of an open cholecystectomy. Not only are fewer common bile ducts damaged now, but the problem is recognised much earlier and is usually corrected (after conversion) at the time of surgery.
- Damage to the bowel itself. This normally occurs when the ports are introduced, but the incidence is minimal as most surgeons now use an 'open' technique.
- A leak of bile. This is usually from the gall bladder bed. In the majority of cases a drain is placed in position during surgery and the bile is sucked out without any ill effect. The drain may have to remain for longer. Occasionally another drain has to be inserted under X-ray control, or a re-operation (either laparoscopic or open) is undertaken. Sometime an ERCP is required. An ERCP requires the passage of a telescope into the upper small bowel. A plastic stent is inserted down the telescope and into the common bile duct. This permits easy drainage of the bile and the leak then dries up. The stent is normally removed six weeks latter.

The second group are general complications that can occur after any operation. The risk of these complications is greatly influenced by pre-existing medical conditions such as a previous heart attack, chronic illnesses such as diabetes, and smoking. The best way to manage these potential complications is to prevent them occurring in the first place. Hence the use of preventative, or prophylactic, treatment. It is important to correct any underlying medical conditions. For this reason it is essential you advise your doctors of all earlier operations and previous or ongoing medical illness. All your drugs should be brought to the hospital and shown to your doctors.

<b>Risk</b>	<b>What happens</b>	<b>What may be done (options)</b>
<i>General complications that may occur after any surgery</i>		
Clot in legs (DVT)	A clot forms in the legs. This may make the legs swell. The clot may break away into the lungs. This is a pulmonary embolus.	Blood thinning drugs (heparin) started at the time of surgery. TED stockings.
Post-operative bleeding	Blood leaks into the abdomen or out through a drain	1. blood transfusion 2. re-operation
Wound infection	An infection, including the development of pus, occurs in the wound	Antibiotics started at the time of surgery. Drainage of any pus is required, and this may require another operation or drainage under radio-logical guidance
Intra-abdominal abscess	A collection of bile, pus or infection blood in the abdomen	Drainage, either by surgery or under radiological guidance
Chest infection	A pneumonia develops	Antibiotics are required. A few patients require ventilation (in ICU)

Wound dehiscence Incisional hernias through the wound	The wound opens up A weakness develops in the wound. The bowel then slips through the abdominal wall and a bulge appears. This usually occurs more than six months after surgery.	Surgical repair within a few hours. A surgical repair, usually with mesh, is required.
Urinary tract infection Bladder may not empty	Bacteria enter the bladder It is not possible to pass urine. As the bladder gets full, the patient gets uncomfortable.	Antibiotics The catheter is re-inserted and removed a few days later. Normally this solves the problem. Sometimes a catheter is required for 2-3 weeks. In men, prostate surgery may be required.
Vascular event	Stroke Heart attack	Each event managed on its own merits. Normally a period in ICU is required.
Death		In a fit person 1 in 1,200. In other patients the risk is very dependent on pre-existing medical problems.

*Complications that may occur after abdominal surgery*

Post operative ileus	The bowel remains paralyzed for longer than the usual 3-4 days	<ol style="list-style-type: none"> <li>1. a tube through the nose is inserted/left in the stomach</li> <li>2. various drugs may be given</li> <li>3. although it normally resolves in 3-5 days an ileus can occasionally be so prolonged that intra-venous feeding (TPN) is required.</li> </ol>
Bowel blockage (adhesions)	Scar tissue in the abdomen blocks the bowel. This can occur within a few days of surgery, or many years later (or any time in between). The life time risk is <10%	A NGT and IVI settles most. Some patients require further surgery.

<b><i>What increases the risk of surgery</i></b>	<b><i>Examples</i></b>	<b><i>Why is the risk increased</i></b>
Medical illness	Pre-existing general medical conditions such as endocrine disorders, heart attacks or strokes etc.	As far as possible pre-existing medical problems will be corrected prior to surgery
Previous surgery		Scarred tissue is normally of poor quality and does not heal well
Obesity		<ol style="list-style-type: none"> <li>1. poor quality tissue</li> <li>2. poor mobilisation leading to increased risk of DVT, chest infection</li> <li>3. poor blood supply so the risk of wound or anastomotic failure is much increased</li> <li>4. extra strain on the wound, heart etc</li> </ol>
Drugs	Examples include steroids, aspirin, blood thinning agents	Normally because they increase the risk of bleeding, infection or decrease the quality of wound healing
Diabetes		<ol style="list-style-type: none"> <li>1. ability to combat infection reduced</li> <li>2. poor blood supply</li> <li>3. slow healing</li> </ol>
Smoking		Increased risk of anastomotic leak, infection, infection, vascular events and thrombosis

**Definitions**

IVI	Intravenous infusion ('a drip')	
NGT	Nasogastric tube	A fine tube from through the nose into the

ICU	Intensive Care Unit	stomach to drain the stomach and stop vomiting.
Ventilation		For very ill patients, or those requiring ventilation
		Placing patients on a machine that does the breathing for them. A tube is placed through the mouth into the upper airway.

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