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Gallbladder
Liver
Pancreas

Brisbane Liver and Gallbladder Surgery
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LAPAROSCOPIC SPLENECTOMY
(KEYHOLE REMOVAL OF THE SPLEEN)

THIS INFORMATION REFLECTS THE PERSONAL PRACTICE OF DR KELLEE SLATER ONLY AND DOES NOT SUBSTITUTE FOR DISCUSSION WITH YOUR SURGEON.

YOUR ADMISSION DETAILS:

Your admission date is: _____

Date of your operation: _____

Fasting time from: _____

Greenslopes Private Hospital Admissions (Phone 1800 777 101) will contact you **the day before** you are due to enter the hospital to confirm the details.

WHY DO I NEED THIS OPERATION?

The most common reasons to carry out this surgery are for disorders of the blood stream, like ITP (idiopathic thrombocytopaenic purpura), infections of the spleen and trauma.

Removal of the spleen in blood disorders is not always guaranteed to solve the problem. The disease can also recur because tiny spleen cells can regrow and may need to be removed at a later date.

WHAT DOES THE SPLEEN DO?

The spleen is high up on the left hand side of the abdomen under the ribs. The stomach sits just in front and left kidney, just beneath. The spleen acts as a filter for bacteria. It also stores white blood cells, platelets and removes old red blood cells.

WHAT DOES THE OPERATION INVOLVE?

Laparoscopic splenectomy involves making four or more small (5 – 10mm) incisions on your abdomen. Carbon dioxide gas is then pumped into the abdominal cavity to provide a space to operate in. A fibre-optic telescope and long instruments are then inserted into the abdomen and the spleen is separated from the stomach, kidney and colon. The blood supply of the spleen is stapled across with a special device that secures the blood vessels.

The spleen is then placed in a bag inside the abdomen. One of the small incisions is enlarged in order to deliver the spleen out of the abdomen in this bag.

CONVERSION TO AN OPEN OPERATION

Conversion to an open operation via a larger incision is not considered a failure in keyhole surgery. Sometimes the surgeon will consider it necessary to make a bigger cut on your abdomen to finish the operation. This is often done if there is bleeding that is difficult to control or if the spleen is too large to remove with keyhole surgery. An open operation is always performed when the surgeon feels that they cannot complete the operation safely with keyhole surgery.

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Keyhole surgery can also be more difficult if there has been previous surgery. This is another common reason to convert to an open operation. This is considered sound judgment. An open operation involves a slightly longer recovery period.

WHAT ARE THE COMPLICATIONS OF SURGERY TO REMOVE THE SPLEEN?

Even though the incisions are small, spleen removal is still considered a major operation. Whilst laparoscopic surgery is considered a relatively safe and low risk operation, all surgery carry a number of serious complications. It must be stressed, these complications are very rare. Complications are dealt with on a case by case basis. Some of these are:

General Risks:

- Death: approximately 1/50,000 risk for all patients having this type of operation.
- Allergic reaction or airway problems related to the anaesthetic.
- Bleeding: usually occurs either during the operation or in the first 24 hours and may require further surgery. You may require a blood transfusion.
- Blood vessel problems: heart attack, stroke. This is very rare.
- Infections: wound, pneumonia, urine, intra-abdominal, IV line related.
- Clots in the legs that may travel to the lungs. This may be fatal.
- Wound pain, abnormal (keloid) scarring or hernia of the wound.
- Bowel obstruction due to hernia or adhesions. This risk is life long.
- Permanent or temporary damage to nerves in the arms, legs and neck due to prolonged immobilisation of the operating table. This may result in loss of feeling or movement.

Risks Specific to Laparoscopic Splenectomy:

- Injury to the tail of the pancreas – resulting in a collection of fluid in the abdomen that may require a further operation or drainage procedures.
- Bleeding from the blood vessels that flow to the spleen requiring a return to the operating theatre.
- Significant distention of the stomach that may lead to a large vomit. Occasionally some of this vomit may be inhaled into the lungs and cause life threatening pneumonia. This is why a tube will be placed via your nose into the stomach for the first day after the operation.
- Splenunculi. Many people have tiny ‘extra’ spleens. After the spleen is removed they may grow and patients with blood diseases may have a recurrence of their disease. This may require further surgery.
- Because the spleen is very close to the lung, partial collapse of the left lung is quite common after splenectomy. A physiotherapist will work with you to prevent this. It is very common to have a slight fever on the first 1 – 2 days after the operation because of this lung collapse.
- Injury to any organ in the abdomen: bowel, aorta, liver, stomach and kidney. This is rare.
- Gas embolism: a bubble of carbon dioxide gets into a blood vessel and causes life threatening heart problems. This is very, very rare.

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- Re-operation: if we have to re-operate for any reason, this may be done with keyhole surgery or an open operation.
- Life threatening infections related to having no spleen (see below).

WHAT ARE THE CONSEQUENCES OF LIFE WITHOUT A SPLEEN?

The spleen is part of the immune system – it is there to filter bacteria and release cells to fight these bacteria. The spleen also cleans up old red cells and stores a component of the blood called platelets.

Generally, day-to-day life without a spleen goes on as normal. The risk of infection is not great, but is however lifelong. The risk of infection is higher in the first twelve months after the surgery. The risk only applies to certain bacteria (Pneumococcus, HIB and Meningococcus) and for this reason, you will receive vaccinations and preventative antibiotics. You will be given the antibiotic Amoxicillin 500mg a day, (an alternative will be prescribed if you are allergic to penicillin.) The vaccinations will cover you lifelong and the antibiotics need only carry on for twelve months i.e. the high risk period. You will get your vaccinations either before the operation or as you leave the hospital.

It is also recommended that you have a yearly Influenza vaccination. Yes, influenza is a virus, but getting the flu can lower your resistance to harmful bacteria.

Even though, the risk of life threatening infection after splenectomy is very low, patients and their families must always by aware they are susceptible to these infections and seek help early if they feel unwell or have an unexplained fever or confusion. You should have a pack of antibiotics with you if you travel overseas in case you become unwell. If you are visiting malaria prone countries you need to take suitable precautions.

I will also check your platelet count in the week after discharge (a blood test) and let you know if you have to begin taking aspirin. A temporary elevation of the platelet count can occur. Platelets help the blood to clot. They are stored in the spleen and after its removal the levels rise. This increases the risk of clots in the legs and lungs. Your platelet count will be monitored and if it is high, it will be treated with an Aspirin - 100mg a day. This deactivates the platelets. You will continue to take this until the platelet count is normal. This usually takes 1-2 months.

WHAT TO EXPECT IMMEDIATELY AFTER SURGERY

Pain Relief

On the first day after surgery, there may be a moderate amount of discomfort at the site of the operation.

You will have some form of pain relief. Most commonly this will be Patient Controlled Analgesia (PCA); a button to press with strong pain killers in it.

Every effort will be made to minimise your discomfort and make it bearable. Your nurses will be monitoring your level of pain control frequently.

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When you are back on a normal diet, you will be converted to oral pain relief.

Drain tubes

You will have a number of plastic tubes in your body following surgery. They will vary a little depending on your particular medical need. They will be removed at variable times following your surgery under our direction. All tubes except for an IV in your hand will be put in place under anaesthesia.

1. IV line: in your arm and in your neck (placed under anaesthesia) to give you fluids and pain relief after surgery.
2. Urinary catheter: tube placed in your bladder so you don't have to get up to pass urine for a day or two.
3. Abdominal drain tubes: one or two soft plastic drains coming out of your abdomen that are placed around the splenic bed to drain any fluid so it does not collect in your abdomen.
4. Nasogastric tube: a tube that goes from the nose into the stomach.

Eating

The spleen is just behind the stomach. As a consequence your stomach may take a few days to begin to work again. You will not have anything to eat or drink for the first day after surgery. Intravenous infusion will provide you with the fluids you need. In most cases you will have a nasogastric tube (NG) in your nose that will remove the stomach contents until your stomach recovers. We will let you know when you can eat again.

It is normal to have a sore throat for a few days after the surgery.

People who drink more than two cups of coffee a day may notice a caffeine withdrawal headache and irritability a few days after surgery.

Urinating/Bowel Movements

During the first few days after the surgery, the tube placed in your bladder will drain your urine. You will probably not have a bowel movement for several days after the surgery.

Activity

You can expect your nurse and physiotherapist to help you get out of your bed on the first day after surgery. You will be able to walk short distances even with all of the tubes and intravenous lines. As each day passes your tolerance for walking and sitting in a chair, out of bed will increase.

It is extremely important to be mobile to prevent pneumonia, clots in the legs and loss of general condition. You can expect to have to wear stockings on your legs whilst in hospital to prevent clots and have an injection of the blood thinning medication Heparin, twice a day under the skin for the same reason.

Your Incisions

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There will be multiple small incisions. There may be one larger one depending on how big your spleen is. You can expect to have a waterproof dressing over your incisions for the first 5 days. You will be able to shower with this dressing. It is quite common to have a small amount of leakage from the wound.

You can peel the dressing off 5 days after the surgery. The wounds should be healed by this time. You may get the wounds wet after 5 days. It is common for the wounds to be bruised. Most commonly there will not be any stitches to remove. They will be of the dissolving type.

Other Important Information

You can expect to see your surgeon every week day. On weekends or in times when your surgeon is operating elsewhere as an emergency, you will see one of the practice partners. All are very experienced in this type of surgery and commonly assist each other in the operating theatre.

We will make every effort to keep you informed of your progress. We are always honest and open with you and your family. Feel free to ask questions.

Length of Stay in Hospital

On average most patients will expect a 4 – 6 day hospital stay. This time, however, differs greatly for individual patients. Some stay shorter, some much, much longer. You will not be discharged before you can walk unaided and care for yourself.

Loss of weight

It is common for patients to lose up to 5% of their body weight after major surgery. The weight loss usually stabilizes very rapidly and most patients after a small amount of initial weight loss are able to maintain their weight and do well.

How you may feel

You may feel weak or "washed out" when you go home. You might want to nap often. Even simple tasks may exhaust you. You may loose your taste for food.

You might have trouble concentrating or difficulty sleeping. You might feel depressed.

These feelings are usually transient and can be expected to resolve in 2 – 4 weeks.

Your medications

I will discuss with you which medications you should take at home. This will usually include some sort of painkiller. If needed, you will go home with a prescription for pain medicine to be taken orally. You may need a daily antibiotic tablet for up to a year and an Aspirin tablet daily for several weeks.

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AFTER DISCHARGE

Your incision at home

You can expect to have a waterproof dressing over your incision for the first five days. You will be discharged with this dressing on. You will be able to shower with this dressing. It is quite common to have a small amount of leakage from the wounds that may collect under the dressing. Occasionally this build up of fluid will leak from under the dressing. Wash the area if this occurs.

You can peel the dressing off five days after the surgery. The wounds should be healed by this time. You may get the wounds wet after five days. It is common for the wounds to be bruised.

There will not be any stitches to remove. They will be of the dissolving type. It is very common for an end of the stitch to poke out of the wound. If it bothers you, you may snip it off with a pair of scissors. Otherwise it will fall off about 6 weeks after the operation.

Your incision may be slightly red along the cut. This is normal.

You may gently wash dried material around your incision and let water run over it. You can pat your wound dry with a towel. Do not rub soap or moisturiser into your incision for at least 4 weeks or until it is fully healed. After this you may rub vitamin E cream along the wound.

It is normal to feel a ridge along the incision. This will go away. It is normal to have a patch of numbness under the wound.

Over the next few months your incision will fade and become less prominent.

Activity

Listen to your body, if it is hurting, don't continue with the activity.

Do not drive until you have stopped taking narcotic pain medication and feel you could respond in an emergency.

You may climb stairs and raise your arms above your head.

You may go outside, but avoid traveling long distances until you see your surgeon at your next visit.

Do not lift more that 10kg for 6 weeks. (This is about the weight of a briefcase or a bag of groceries) This applies to lifting children, but they may sit on your lap.

You may start some light exercise when you feel comfortable.

You may swim after 4 weeks.

Heavy exercise may be started after 6 weeks - but use common sense and go slowly at first.

You may resume sexual activity when you feel ready unless I have told you otherwise.

WHAT PREPARATIONS DO I NEED TO MAKE BEFORE MY SURGERY?

Hospital

The hospital will call you the day before your operation to confirm your admission time. It will also let you know about any hospital excess you may have to pay.

Fasting

You must have nothing to eat or drink for six hours prior to surgery. (You may take sips of water up until 2 hours before the operation and you may take your medications with a sip of water). You must not chew gum or smoke on the day of the operation.

Medications

- If you are taking Prednisone continue on your normal dose or as advised by your haematologist.
- If you are on blood thinners such as Aspirin, Warfarin, Plavix, Iscover, Clopidogrel, Pradaxa, Dabigatran, Rivaroxaban, Xarelto or anti-inflammatory drugs (Brufen, Mobic, Voltaren, etc), they can cause bleeding during surgery. We will advise you about what to do with these drugs prior to surgery. You must let us know about these drugs and the decision to stop them is based on each individual patient's needs.
- Diabetic medications: we will give you advice on whether to take your diabetic medications on the morning of surgery or not. Some diabetics will be admitted the night before the operation.
- Cholesterol lowering medication should not be taken when you are fasting.
- If you are taking any alternative medications e.g. St John's Wort, fish oil or garlic, you should stop these tablets one week before surgery as they may result in excess bleeding.
- You may continue to take a multivitamin.
- Continue to take all other medications, even on the morning of surgery with a small sip of water.

Other things to know

- You must bring all relevant x-rays to the hospital with you.
- If you smoke, it is in your best interests to stop completely as soon as you can. See your GP for alternatives or call Quitline (13 18 48) if you wish to seek advice.
- You should also abstain from drinking alcohol 24 hours prior to any surgery.
- Bring all your current medications with you to the hospital.
- Bring comfortable pyjamas, personal toiletries, small change for newspapers etc.
- Do not bring large amounts of cash or valuables.

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WHAT WILL THIS SURGERY COST?

I largely work as a 'no-gap' doctor. This means that the surgeon fee for your operation will be sent to your health fund and there will be no 'gap' or extra amount of money to pay. There are always exceptions and decisions regarding this are made on a case-by-case basis.

If you do not have private health insurance or if you have overseas insurance, you will be given a quotation for surgery, anaesthetic and hospital fees and must pay in full ***prior*** to the operation.

If your Body Mass Index is >35, the surgery is far more difficult and the risks of complications are much higher. If it is medically suitable, we may recommend a period of weight loss with a program called INTENSIV before contemplation of this operation, so it can be done more safely. This will incur an extra out of pocket expense.

Outpatient consultations are not covered by the health funds and there will be a charge for these meetings. You will get a proportion of this money back from Medicare. There is no fee to be paid for normal care after the operation.

There may be other out-of-pocket fees from your anaesthetist and any other specialists who are asked to look after you. You should ask them ahead of time any out-of-pocket costs. Ask us who will be performing your anaesthetic and you can make enquiries with them about any out-of-pocket expenses.

There may be extra costs for x-ray, pharmacy and pathology. You have a right to gain 'informed financial consent'. Fees from other practitioners are beyond our control and you should ask for the costs from each person who is asked to look after you. Patients have a choice when it comes to paying for their health care and you are fully within your rights to shop around.

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ABOUT YOUR SURGEON

Dr Kellee Slater MBBS (Hons) FRACS

2006 – Present	Staff Surgeon Hepatopancreatic-Biliary-Liver Transplant Princess Alexandra Hospital and Greenslopes Private Hospital Brisbane, Queensland
2004 – 2006	Hepatobiliary and Liver Transplant Fellowship Princess Alexandra Hospital Brisbane, Queensland
2002 – 2004	Liver and Kidney Transplant Fellowship University of Colorado Hospital Denver, Colorado, United States of America
2002	Fellow of the Royal Australian College of Surgeons (FRACS) General Surgery
1989 – 1994	MBBS (Honours) University of Queensland