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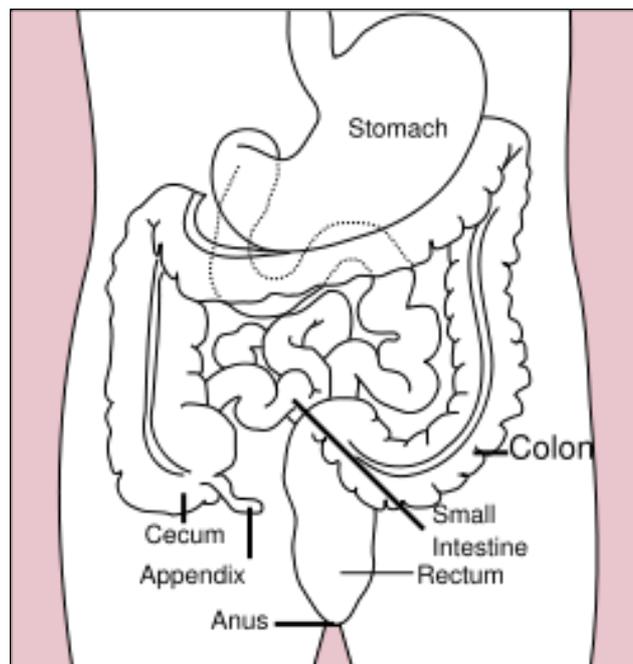
WHAT'S IT LIKE TO HAVE YOUR APPENDIX REMOVED?

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WHERE IS THE APPENDIX AND WHAT DOES IT DO?

The appendix is located in the lower part of the abdomen on the right side. It is a blind ending tube about the same size as an earth worm. It is attached to the large bowel and faeces can move in and out of it. Its function remains a mystery however it is apparent that humans can cope perfectly normally after the appendix is removed. The appendix can become inflamed in people of all ages and removal of the appendix is one of the commonest operations performed.



WHY DO PEOPLE GET APPENDICITIS?

This is also a bit of a mystery. The most common cause seems to be when a ball of faeces gets stuck in the appendix and causes pressure on its wall. This probably slows down the blood flow in the appendix. Swelling occurs, further cutting off the blood supply to the appendix and eventually infection and gangrene set in and the appendix ruptures.

Other things like worms, tumours and infections can cause appendicitis. The appendix is a very common site for a tumour called a carcinoid and the pathologist will look for this under the microscope. A carcinoid may need further treatment with a more extensive operation. Rarely, a cancer of the large bowel may be a cause of appendicitis.

HOW IS APPENDICITIS DIAGNOSED?

Most cases can be diagnosed just by the story of the pain and examination of your abdomen. A blood test that indicates infection is present is also helpful.

There are other things that can cause pain on the right side of the abdomen apart from appendicitis. This can include a urine infection, problems with the ovary and tube, pregnancy in the fallopian tube, bowel infections and swelling of the glands around the appendix. If the story is a little atypical some further tests may be required to make sure the diagnosis is correct. A urine test is usually sent off to check for a urine infection. For women, a pregnancy test is usually done.

Ultrasound is very good at looking at the ovaries and tubes in women and will help to rule out problems with those organs. Ultrasound does not always see an inflamed appendix. CT scan is another excellent test for appendicitis and will diagnose most cases.

WHAT IS THE TREATMENT OF APPENDICITIS?

Most people with the diagnosis of appendicitis will need an operation to remove their appendix. The operation is usually done within 24 hours of presentation to the hospital. The vast majority of patients with appendicitis are treated this way.

In most cases, the inflammation will be progressive and the appendix will go on to form a collection of pus around it (an abscess) or the appendix will die and perforate. Both of these problems are serious.

When a patient presents with many days of pain i.e. a week after getting appendicitis, they might have formed an abscess. This can make surgery very difficult. In selected cases, the best option may be not to operate straight away, but to give a long course of antibiotics via a drip. If there is an abscess, another option may be to drain the pus in the x-ray department with a small tube inserted through the skin. This will take the heat out of the situation and make things get better. When all the inflammation settles, the appendix can then be removed via a booked operation about six weeks later. This can often be done with keyhole surgery.

Occasionally, appendicitis can be quite mild and there are some cases that might get better without an operation, especially if antibiotics are given. Some patients can have a few episodes of appendicitis before the diagnosis is made. If pain continues to occur, the appendix can then be removed in an arranged fashion. This is called interval appendicectomy.

WHAT DOES THE OPERATION INVOLVE?

Most commonly, the appendix is removed via keyhole (laparoscopic) surgery. This is done by making three or more small cuts in the lower abdomen. Carbon dioxide is pumped into the tummy to inflate it and provides a space to operate in. A camera mounted telescope and long instruments are inserted and the appendix is cut free of its attachments. A tie is placed around the base of the appendix and it is removed. The operation takes anywhere from 10 minutes to an hour depending on how inflamed the appendix is.

Sometimes, the appendix cannot be removed safely by keyhole surgery and I will make an incision directly over the appendix on the right side of the abdomen. This is called “open surgery”. This is a time honored operation. Common reasons to do this incision are: burst appendix, bleeding that is difficult to control with keyhole surgery or if the appendix is in a difficult position and cannot be reached safely with the long instruments. Converting to an open operation when needed is considered sound surgical judgment and is in no way a failure.

There is very little difference in the recovery time between the open and keyhole operations.

You will be given one or more doses of antibiotics depending on the severity of your appendicitis. If your appendix is perforated or ruptured, you may need at least 5 days of antibiotics via the intravenous drip *in hospital*.

Occasionally I will find something other than your appendix that is causing your symptoms. Other causes of pain on the right side are:

- Problems with the ovary or fallopian tube – cysts, infections
- Meckel’s diverticulum – an out pouching of the small bowel that can be inflamed
- Jejunal diverticulum – as above
- Urinary tract infection
- Gastroenteritis especially a bacteria called *Camphylobacter*
- Inflammatory bowel disease
- Mesenteric adenitis – inflammation of the lymph glands around the pancreas
- Twisting of a section of fat inside the abdomen
- Perforated large bowel diverticulum

Depending on what is wrong, I will then make a decision about what is best for your care. If the problem is simple, I will fix it at the same operation. This may also require a larger incision. If the problem is more serious but not immediately life threatening, I will often wake you up and plan surgery on another day after discussing it with you.

DO I NEED A COLONOSCOPY?

Sometimes, appendicitis may be caused by a cancer in the large bowel blocking the appendix. This might not be obvious at the operation to remove your appendix. If you are older than 50 I will recommend having a colonoscopy (camera passed around the large bowel) when you are recovered, to rule out this possibility.

WHAT ARE THE COMPLICATIONS OF APPENDIX OPERATIONS?

Complications after appendix operations are uncommon.

- Wound infections occur in approx. 5% of patients.
- Infections or abscesses forming in the abdomen after appendicitis do occur and may require further drainage with an operation or a procedure in x-ray.
- Damage to bowel, bladder or blood vessels, requiring open surgery and many weeks in the hospital. This can be very serious.
- Bleeding requiring transfusion.
- Other infections: pneumonia, urine, IV line related.
- Clots in the major blood vessel that supplies blood to the liver. This may cause permanent problems with the liver and bowels. It is rare but very serious.
- Clots in the legs that may travel to the lungs. (Deep venous thrombosis/ Pulmonary embolus) This may be fatal.
- Temporarily unable to pass urine – you may require a urinary catheter for a day or two.
- Wound pain and prolonged numbness under the wound.
- Hernia of the wound.
- Bowel obstruction due to hernia or adhesions. This may occur at any time and the risk is lifelong.
- Allergic reaction to the antibiotics.
- Anaesthetic risks; there is a small risks of severe allergy, inhalation of vomitus, drug reaction and even death during an anaesthetic. (1/50,000). It is common to have a sore throat after your anaesthetic. There is a 1/500 risk of nerve injury to the arms or legs.
- Death: is very rare after operations to remove the appendix.
- If you are pregnant and need your appendix removed, there is a risk of pre-term labour, death of the baby or long term developmental problems in the baby like cerebral palsy. During pregnancy, the risks involved in not removing the inflamed appendix are much more than the risks of removing it.

WHAT TO EXPECT IMMEDIATELY AFTER THE OPERATION

Pain Relief

Every effort will be made to minimize the discomfort. The nurses will be monitoring your level of pain frequently.

It is very common to have pain in the right shoulder after keyhole surgery. This is due to the effect of the gas pumped into your abdominal cavity during the surgery. The pain typically disappears within one day of surgery.

On the first day after surgery, there may be a moderate amount of discomfort at the site of the operation. You will have a few choices for pain relief.

There are two major types of pain relievers after keyhole surgery.

1. Panadol, Panamax, Paracetamol

You will be amazed the power of regular paracetamol. It will cut down the need for the very strong pain pills.

They do not cause constipation.

Do not take more than 8 tablets a day or serious liver damage may occur.

2. NSAIDs (Indocid, Brufen, Mobic)

Provides excellent pain relief. They do not cause constipation.

Must be used very cautiously in the elderly and those with kidney problems because it might cause kidney failure.

They may cause stomach ulcers. If you experience any pain in the upper abdomen you must stop this medication immediately and seek advice.

It is uncommon to need anything stronger than these medications after you go home. Try and avoid codeine or narcotic containing products – like Panadeine, Panadeine Forte or Endone as they cause constipation.

3. Morphine, Fentanyl (narcotics)

It is uncommon to need an injection of these powerful painkillers after the first day of surgery.

We will discuss your take home pain relief requirements with you prior to discharge.

It is not usual to have to go home after appendix surgery with narcotic pain relievers.

Drain tubes

Sometimes you will wake up after surgery with a soft plastic drain tube in your abdomen. I will advise when this needs to be removed.

Eating

If it was early appendicitis, you will be allowed to have fluids to drink four hours after you wake up and a light diet the following day. It is very common to feel slightly nauseated for 12 hours following surgery.

If you have perforated appendicitis, a diet may be introduced more slowly and you will not feel like eating too much anyway.

Urinating/Bowel Movements

After any surgery a patient may have trouble passing urine. This is not common, but if it occurs, is temporary. Occasionally a catheter needs to be inserted to help you pass urine.

There is usually some disturbance to your bowels in the week after surgery. It is normal for them to not be back in their normal rhythm for 2 or three weeks. Because of the strong painkillers you will be given during the surgery, constipation is the most common symptom. Daily laxatives like Movicol or Coloxyl are really helpful as are natural laxatives like prunes and Metamucil. Some patients may experience diarrhoea due to the antibiotics. This will usually stop as soon as the antibiotics do. Let me know if this is not the case as ongoing diarrhoea can indicate a serious infection.

Activity

It is very important to begin light activity shortly after surgery. This is 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 heparin twice a day under the skin for the same reason. Increase your activity as you feel better.

Your Incision

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 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.

There will be no 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. Use a towel to pat the wound dry. Do not rub soap or moisturizer 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.

Length of Stay in Hospital

On average most patients will expect a 1 – 2 night hospital stay for early appendicitis. If you have perforated appendicitis you may need to stay in 5 days or more.

Other Important Information

You can expect to see your primary surgeon every day. On weekends or in times when your surgeon is operating elsewhere, 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.

AFTER DISCHARGE

What can I eat after I have my appendix removed?

There are no restrictions on your diet. It is normal to have a reduced appetite for a couple of weeks after the surgery.

How you may feel

It is quite common to feel very tired and to want to have daytime naps for the first two weeks after surgery. Listen to your body and rest when you need to.

This is transient and can be expected to resolve in 2 – 4 weeks.

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.

Do not lift more than 15 kg for 4 weeks after keyhole surgery. (This is about the weight of a briefcase or a bag of groceries). This also 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 2 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.

COSTS TO BE INCURRED FROM THIS SURGERY

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.

Pre-op 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.

ABOUT YOUR SURGEON

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- 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
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- 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)
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