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How to treat appendicitis

Appendicitis is a common condition where the appendix - part of the gut becomes blocked, swollen, and inflamed. It typically causes stomach pain in the lower right part of the tummy (abdomen), amongst other symptoms. Appendicitis needs urgent treatment in hospital, usually requiring surgery to remove the appendix.

The main treatment for appendicitis is emergency surgery to remove your appendix. This can be done as keyhole (laparoscopic) surgery or open surgery. Antibiotics are usually given before the operation, and sometimes antibiotics alone can be used to treat appendicitis, without surgery.

If you think you may have appendicitis find out what to do here.

In this series of articles centred around appendicitis you can read about symptoms of appendicitis, treatment of appendicitis, and causes of appendicitis – all written by one of our expert GPs.

The rest of this feature will take an in-depth look at the treatments for appendicitis as, at Patient, we know our readers sometimes want to have a deep dive into certain topics.

How to treat appendicitis

Appendicitis needs to be treated in hospital by a surgical team.

Surgery

Surgery is the main treatment for appendicitis. Because appendicitis is a medical emergency, surgery is usually performed as soon as possible to remove the appendix.

In the UK, keyhole (laparoscopic) surgery is usually offered. The recovery time from laparoscopic surgery is usually shorter than with open surgery. Laparoscopic surgery involves making several small cuts in the tummy (abdomen). A tiny camera is inserted through one of the cuts. Gas is pumped into the abdominal cavity to allow the surgeons to see the inside of the abdomen and the appendix more clearly and allow them room to work. Small surgical tools are inserted through the other cuts and used to cut out and remove the appendix.

Laparoscopic surgery might not be suitable for everyone - for example, people who have previously had open abdominal surgery, which can make it difficult. Open surgery may be offered instead. This involves making one larger cut in the lower right-hand side of the abdomen, and removing the appendix this way.

Sometimes, laparoscopic surgery for appendicitis has to be converted to open surgery during the procedure. This might be if the inflammation of the appendix and gut is too big to be safely removed with a laparoscopic method. Your surgeon will discuss this possibility with you when explaining the risks and benefits of the surgery.

In some severe cases of appendicitis, where the appendix has burst and infection has spread throughout the abdominal cavity (peritonitis), a bigger surgery called a laparotomy might be required, to wash out the abdominal cavity and remove the infection and pus. This involves making a longer cut in the middle of the tummy.

Once removed, the appendix is sent to a lab to be examined under a microscope, mainly to look for signs of cancer. This is extremely rare, and only really done as a precaution.

Antibiotics

Antibiotics are usually started as an injection or drip, and later switched to tablets or capsules. They are usually given before the operation to help treat infection in the appendix. If the appendix hasn't burst and is removed intact in the operation, they usually aren't needed afterwards. If the appendix has burst before the operation, a longer course of antibiotics is given.

There has been a lot of debate and research about treating appendicitis with antibiotics instead of surgery. There is controversy over this though. Surgery has been the accepted treatment for appendicitis for more than a century, and there is much uncertainty about whether antibiotics are an effective alternative.

Some surgeons say that antibiotic-only treatment can be an acceptable alternative to surgery in a certain group of people who have appendicitis without rupture (bursting) of the appendix, particularly if they really want to avoid surgery. Antibiotic-only treatment can also be used for people where the risks of having an operation are very high - for example, if they are too unwell or frail to survive an operation.

There is lots of ongoing research, so recommendations might change in the future.

The main drawback of antibiotic-only treatment is that appendicitis can come back. One estimate is that appendicitis returns in up to four out of ten people treated with antibiotics within five years. In contrast, removing the appendix with surgery means that appendicitis can't happen again.

Pain relief, fluids, and other treatments

Because appendicitis is a painful condition, people with it are given pain relief to improve the symptoms.

People with appendicitis are often dehydrated so fluids (through a drip, into the vein) are usually given - especially when waiting for surgery and they can't eat or drink anything.

In rare cases, people who are seriously ill with appendicitis - such as those with sepsis that doesn't respond to treatment with antibiotics and fluids - might need supportive treatment in intensive care.

Recovery time for appendicitis

Most people make a quick recovery after surgery for appendicitis. After laparoscopic surgery, people can usually go home after one or two days – recovery from open surgery might take three or four days. If someone has had severe appendicitis, or the operation was complicated, they are likely to need to stay in hospital for longer. The pain from the surgical wound usually settles down within three to four days, and there can be some mild pain or pulling for about a month as it continues to heal. Pain relief can help with the symptoms.

People often need a bit of time to recover after surgery, and tend to feel more tired than usual. Everyone is different, but people usually need between one to two weeks off work or school before returning. Some people need longer, especially if they have been seriously unwell. If your job involves lots of heavy manual work, it's generally recommended to stay off work for four weeks, whilst the cuts in the abdomen are healing.

The hospital should give you a fit-note for work before you are discharged. This should cover the total time that they expect you to be off work. Ask the ward team for one before you leave.

If your recovery takes an unexpectedly long time, and you need another fit note, you can speak to your GP.

Heavy lifting should be avoided for around four weeks. Exercise and sport can re-start as soon as you feel well enough. It's a good idea to start slowly and then gradually build up to full fitness. It's probably a good idea to avoid contact sport for around four weeks.

You can restart driving when pain doesn't stop you doing an emergency stop with the brake-pedal - usually in around one to two weeks.

Some pain relief medicines can cause drowsiness and impair your driving reactions - do not drive if you are affected by this.

You should speak to a doctor, your GP, A&E, or the surgical team which discharged you urgently if you or your child are developing any of the following, which could indicate a serious problem:

- A **high temperature**, fevers, or feeling shivery or shaky.
- Increasing pain, swelling or redness from the wound, or any other sign of infection of the wound - such as pus coming out of it.
- Pain and swelling in one of the legs, or shortness of breath which can be signs of a **blood clot on the legs** or **the lungs**.
- Worsening abdominal pain.

Appendicitis complications

Appendicitis can cause several complications. These are more likely if the appendicitis has been going on for longer - for example, if it's taken more time to diagnose and treat.

These include:

- Rupture the appendix bursting is the main complication of appendicitis. This causes infection and pus to enter the abdominal cavity, which can cause severe infection.
- An abdominal abscess a ball of pus can occur after the appendix bursts. These often need to be drained, sometimes by using a needle, as antibiotics tend not to get into the middle of the abscess very well.
- Appendix mass sometimes, If the appendix bursts, the body reacts by producing a big lump (mass) of inflammation to control the infection (appendix mass). Surgeons tend to recommend a course of antibiotics to try to shrink this, followed by an operation later to remove the appendix.
- Generalised peritonitis sometimes, when the appendix bursts, the infection can spread throughout the entire abdominal cavity, which can cause this severe illness.
- Sepsis in severe cases, especially if the appendix has burst.

Is appendicitis fatal?

In severe cases, especially if not treated promptly and effectively, appendicitis can be fatal. Without any treatment, it's estimated that the risk of death from appendicitis is up to 50%. However, because we do have good treatments, such as surgical removal of the appendix, deaths from appendicitis are rare in the UK.

The risk of death where the appendix hasn't burst (early appendicitis) - is around 0.1%. In severe cases where the appendix has burst (ruptured), the risk of death is around 5%.

The risk of death from appendicitis is higher in older people. This might be because it's more difficult to diagnose in this group, and so is often diagnosed at a late stage – such as after the appendix has burst. It might also be because some older people tend to have frailty and other longterm medical conditions, and are therefore less able to survive serious infections such as appendicitis or an emergency operation.

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