

# Caring for people with appendicitis

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**A**ppendicitis is a major condition that can be classed as either medical or surgical. Seven percent of the UK population will at some stage in their life experience appendicitis. The condition is more common in men than women and usually occurs in those who are aged between 10–30 years of age.

Inflammation or swelling of the vermiform appendix (this is the full term for the appendix) is termed appendicitis. The appendix is a tiny closed finger-like projection; a muscular pouch that hangs from the caecum, underneath the ileocaecal valve (see *Figure 1*), the appendix has no known function. The appendix is usually situated in the lower right aspect of the abdomen, about 7.5cm below and to the right of the umbilicus. Tortora and Grabowski (2008) describe it as a twisted coiled tube that is approximately 8cm in length and is usually less than 6mm in diameter, if the appendix is any larger, it is more than likely inflamed.

## Appendicitis

The most common cause of appendicitis is infection when the appendix becomes inflamed from ulceration of the mucosa or it becomes obstructed. An obstruction of the appendiceal lumen may be caused by a hard faecal mass (a faecolith), a stricture or viral infection. Bacteria can thrive when in this kind of environment. If the appendiceal lumen becomes obstructed this will prevent mucous and pus from draining in to the caecum.

In a number of cases there is no known cause for appendicitis, when this is the case it is called 'idiopathic'. If left untreated, the obstruction can result in dilation of the appendix and an inflammatory process may follow, this can lead to:

- Infection
- Thrombosis
- Necrosis
- Perforation.

Infection and obstruction can cause the appendix to fill with bacteria that produces pus. As the appendix fills with pus coupled with the inflammatory process, it swells and will eventually perforate (burst).

Appendicitis is a surgical emergency; a ruptured appendix has the potential to cause peritonitis and septicaemia, some people who have undergone surgery for appendicitis have a ruptured appendix. These conditions are rare but can be fatal and may cause death. Prompt diagnosis and surgical

## Abstract

Appendicitis is a condition that can affect people of all ages, however, it commonly affects and is associated with younger people. Appendicitis can be a difficult complaint to diagnose as it can mimic other diseases such as a urinary tract infection or even some gynaecological conditions. Failure to diagnose and treat appendicitis can result in severe complications and in some cases death. If the healthcare assistant or assistant practitioner is to provide safe and effective care using a holistic approach, understanding the anatomical and pathophysiological issues associated with the appendix and the care and treatment of the person is vital. This article provides an outline of the anatomy and pathophysiological issues associated with the appendix, the signs, symptoms, treatment options and care requirements for the person who has appendicitis.

There is a glossary at the end of the article which provides definitions of words you may not be familiar with.

### Key words

■ Acute ■ Preoperative ■ Perioperative ■ Postoperative

intervention (appendectomy) can significantly reduce the risk of death and prevent complications; the major cause of death is down to a delay in diagnosis. Appendectomy is a common emergency surgical procedure and is carried out with excellent success rates. An individual can live a normal life without an appendix.

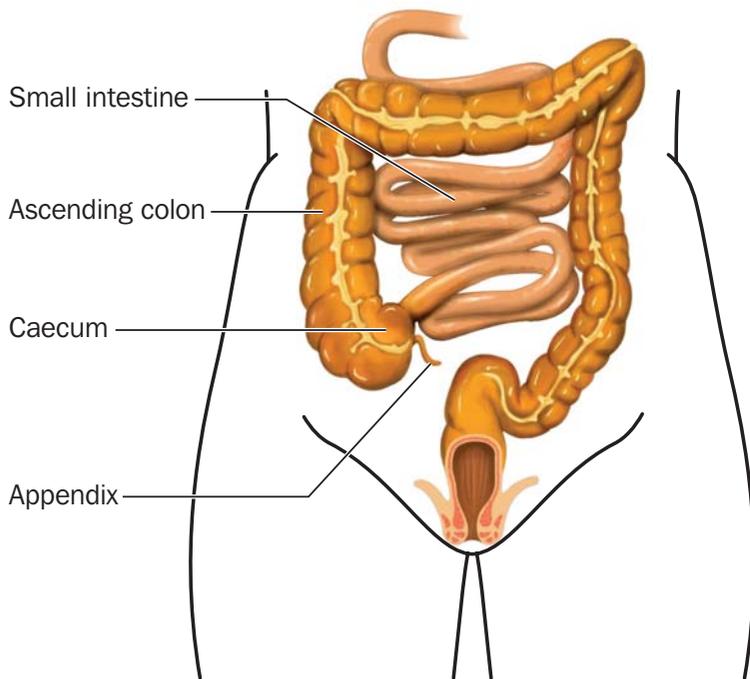
## Signs and symptoms

There are a number of signs and symptoms associated with appendicitis; usually the chief complaint is abdominal pain with a sudden onset, as time progresses the pain worsens. Initially the pain is generalized but may become localized and settles in the right lower aspect of the abdomen, there is a positive response to palpation in the region of McBurney's point. McBurney's point is located approximately half way between the umbilicus and the anterior superior iliac spine. There may be no abdominal pain, however, referred pain can occur, for example, on rectal examination there may be rectal tenderness. If a rectal examination is to be performed this needs to be undertaken with caution as this may exacerbate the person's current condition.

Other signs and symptoms can include:

- Nausea

Figure 1. Small and large intestines



- Anorexia
- Vomiting
- Increase in temperature (pyrexia)
- Increased pulse rate (tachycardia)
- Malaise
- Constipation/diarrhoea
- Abdominal rigidity.

It must be remembered that different people may report different signs and symptoms. There may be other causes associated with some of the signs and symptoms above, for example, gastroenteritis, urinary tract infection, renal stones and ectopic pregnancy.

### Investigations and diagnosis

It may be difficult to make a diagnosis of appendicitis (Benjamin and Patel, 2002). A detailed history of current

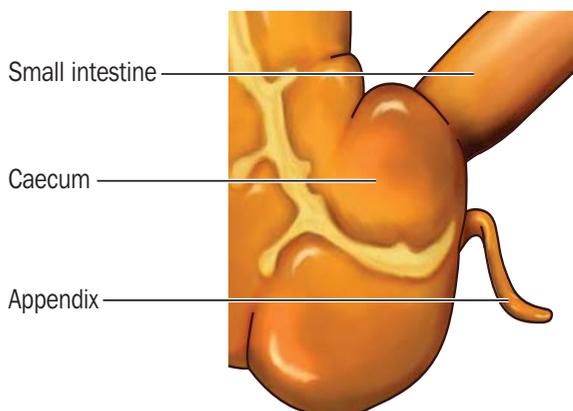


Figure 2. Detail - the appendix, caecum and small intestine

and past experiences should be noted and a physical examination of the abdomen is needed whereby it is gently palpated. Venous blood will be examined to determine if there is an elevation of white blood cells, this may indicate the presence of infection and/or inflammation. A urine sample may be required to determine if there is urinary tract infection and a pregnancy test may be needed to rule out ectopic pregnancy. A gynaecological examination (pelvic examination) may be required as the signs and symptoms that may be suspected as appendicitis may be similar to those experienced by women who have a gynaecological condition.

### Treatment

Removal of the appendix is the most common form of treatment; there is no other effective treatment for acute appendicitis. Chan et al (2001) note that as many as 20% of people who are diagnosed with acute appendicitis and have the appendix removed do not have appendicitis. Regardless of the data associated with an inaccurate diagnosis, it is deemed safer to operate and remove the appendix in order to prevent morbidity and mortality.

### Preoperative care

It is important that a person who is suspected of having appendicitis is not given anything to eat or drink as emergency surgery may be needed. Prescribed intravenous fluids will be required; suppositories or enemata must not be given as this may result in rupturing of the appendix. Analgesia is needed after a diagnosis is made (if given prior to the diagnosis being made this may mask any symptoms the person may have and an inaccurate diagnosis could be made). Once a diagnosis has been made then analgesia must be provided to alleviate pain; often this is given in the form of an opiate. Never apply a hot water bottle or any other form of heat over the area where the person is feeling pain as this can cause rupture of the appendix (Kowalak, and Munden, 2008). Steps should be taken to prevent and control nausea and vomiting by the administration of a prescribed antiemetic.

Quality information giving in the preoperative phase can have a positive effective on postoperative outcomes (Hughes, 2002). It is vital therefore that the person is provided with all the information needed to make an informed decision. Information must include potential risks and complications. This necessitates the provision of accurate information in a language and format the person can understand.

The following complications may result from surgery to remove an inflamed appendix:

- Haematoma formation associated with the wound
- Wound infection; prescribed antibiotics may need to be given preoperatively, perioperatively and postoperatively
- With the laparoscopic approach it may not be possible to complete the operation using this technique and a

## Glossary

<b>Appendectomy</b>	Surgical removal of the appendix
<b>Appendicitis</b>	Inflammation of the appendix
<b>Caecum</b>	The area where the small and large bowel join
<b>Faecolith</b>	A hard piece of faecal matter
<b>Inflammation</b>	The body's response to infection, irritation or injury, this can cause swelling and pain
<b>Necrosis</b>	Death of or part of an organ
<b>Morbidity</b>	The incidence of disease
<b>Mortality</b>	Total number of deaths in a population
<b>Opiate</b>	A narcotic medicine, for example, morphine
<b>Peritonitis</b>	Inflammation of the peritoneum, the lining of some parts of the abdominal cavity
<b>Septicaemia</b>	Blood poisoning, a number of bacteria in the blood that are actively dividing
<b>Stricture</b>	A narrowing; particularly related to a tube or canal
<b>Thrombosis</b>	The development of a thrombus; a blood clot

larger open incision may be needed.

Listening to the person and answering any questions or concerns they have can alleviate anxiety. If the healthcare assistant (HCA) or assistant practitioner (AP) is asked questions they do not know the answer to, they must refer the person to a registered nurse.

### Appendectomy

Removal of the appendix is carried out under a general anaesthetic. Laparoscopic appendectomy is the most common procedure performed for acute appendicitis; this is sometimes called keyhole surgery. Other surgical incisions may also be used, for example, a small incision is made on the right of the lower abdomen (the right iliac fossa).

The incision is made through the skin and the muscle low down on the right hand side of the abdomen, this is overlying the appendix. When the surgeon locates the appendix this is removed and the stump is then sutured. Dissolvable sutures are usually used to close the wound on the abdomen. A laparoscopic approach necessitates an incision being made in the navel and carbon dioxide is used to inflate the abdomen to allow for clear vision of the abdominal organs and to locate the appendix. Usually four keyholes are made for instruments to be inserted into the abdomen, the appendix is located, excised and brought out through one of the key holes, and the stump is then sutured. After the procedure the four keyholes are sutured.

If the appendix has ruptured, this will require a larger incision to be made. It is usual to make the incision in the midline of the abdomen.

### Postoperatively

Effective postoperative care is based on good preoperative preparation. An intravenous infusion used to administer intravenous fluids should be continued and symptoms such as nausea and vomiting should be controlled with the administration of a prescribed antiemetic medication.

Vital signs must be monitored as the person's condition dictates, pain must be managed effectively. A pain scale can be used to assess the severity of pain as well as evaluating pain reduction interventions.

Overall, the care of the person who has undergone appendectomy will be determined by the type of surgical intervention coupled with local policy and procedure. A drain may have been inserted and as such the care and management of the person must reflect this. The person will be reviewed with respect to when they may eat or drink after the procedure. The wound must be managed using asepsis and again in accordance with policy and procedure. Normally after approximately 48 hours the person can have a shower or bath as the wound is expected to have sealed.

It is usual to mobilize the person the day after surgery

**'Appendicitis can be fatal if not promptly diagnosed'**

and this should be gently encouraged offering the person support. It needs to be explained to the person that mobility can only help and that this will not cause any damage to the wound or underlying structures.

The hospital stay is normally between 2-3 days providing there are no complications. The person may need to have sutures removed (if they are not dissolvable) at the general practice and arrangements need to be made for this on discharge. There may be some swelling and bruising around the wound site but if after the period following the operation the person experiences the following, they should seek medical advice:

- Increased pain, redness, swelling or discharge from the wound
- Difficulty in passing urine
- High temperature.

A GP practice, walk-in centre or NHS Direct should be able to help.

Simple pain killing tablets should relieve the pain or discomfort felt after the period following the operation. It is advisable that the person does not put excessive strain on the operated area for 3-4 weeks after surgery, but they should be encouraged to engage in increasingly strenuous exercise. Lifting of weights should be avoided until the wound is fully healed. Driving should not take place for at least 2 weeks after the operation, but this may take a little longer. The person must check with their insurance company with regards to this issue as some insurance policies vary.

Sexual activity can resume as soon as the person feels comfortable. Straining at stool and constipation should be avoided. A high fibre diet and drinking fluids can help.

Returning to work is usually within 2 weeks. Advice should be sought from the general practice if the person's

work involves heavy lifting and in this case this is often extended to 4 weeks. A sickness certificate may be required for those who work.

## Conclusion

Appendicitis can cause severe complications and can be fatal if not promptly diagnosed and treated. Surgical intervention is usually required without delay. There are a variety of interventions available and this is dictated by the person's condition.

HCA's and APs need to develop an awareness of the condition including the anatomical and physiological aspects of the appendix. They also need to be able to recognize the signs and symptoms of appendicitis as well as the pre, intra and postoperative care of the person with appendicitis if they are to provide safe and effective care.

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## Key Points

- Appendicitis is a common condition.
- A delay in diagnosing and treating appendicitis can have detrimental effects on the person.
- Understanding the pathophysiological changes associated with appendicitis can help the healthcare assistants and assistant practitioners provide safe and effective care.
- The only effective form of treatment for appendicitis is appendectomy.
- An holistic approach to care is advocated.

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