Appendicitis, or inflammation of the appendix, requires immediate surgical attention in order to prevent life-threatening complications.

Inflammation of the appendix, a condition called appendicitis, affects 5 to 7 per cent of the general population, across all age groups, and removal of the appendix (appendectomy) is the most common emergency surgical procedure performed worldwide.

All the early stages, the symptoms of appendicitis may be mild and confused with indigestion or stomach flu, as the pain usually starts from the navel or upper abdomen. Over time (usually within 1 to 2 days), the abdominal pain will usually worsen significantly and localise to the right lower abdomen.

“Appendicitis warrants immediate surgical attention as the appendix to prove to rupture and this can cause a life-threatening bacterial infection of the body,” says Dr Victor Lee Tiong Wian, Senior Consultant, Department of Hepato-pancreato-biliary and Transplant Surgery, Singapore General Hospital (SGH), a member of the SingHealth group.

What is the appendix?
The appendix is a worm-like appendix that is attached to the caecum, the first section of the large intestine. Measuring 4 -10 cm, the human appendix has no vital function.

Other symptoms of appendicitis
Besides constant lower right abdominal pain, inflammation of the appendix can lead to symptoms such as:

- Loss of appetite
- Nausea and vomiting
- Vomiting
- Abdominal swelling and tenderness

What causes appendicitis?
Appendicitis is caused by a bacterial infection which attacks the appendix wall. The inflammation may also be caused by a blockage such as hardened stool or mucus lodged in the appendix. Very often, the cause of the inflammation is not known or may not be identified.

Diagnosing appendicitis
The diagnosis of acute appendicitis is usually made clinically, and doctors in the primary care setting or emergency setting are well-versed with its classical signs and symptoms.

Diagnosing appendicitis among the elderly, young children and pregnant women can sometimes be difficult. Nausea and vomiting can also be more common symptoms among pregnant women. While the elderly often experience mild abdominal pain which can be attributed to other causes. In the case of young children, they may not be able to articulate their symptoms, which can delay the diagnosis.

A physical examination to locate the site of the abdominal pain is important in diagnosing appendicitis. The vast majority of diagnosis of acute appendicitis is made by clinical assessment without specialised tests. Blood tests or a CT scan may follow to confirm the diagnosis.

Complications of appendicitis
Seek treatment early because if the appendix ruptures, an abscess may form and bacteria may spread to the entire abdomen, causing a serious condition called peritonitis, an inflammation of the abdominal wall lining.

Very young children (aged two and below) and the elderly (aged 70 and above) are also at higher risk for a ruptured appendix.

Treatment of appendicitis
Surgery
In acute appendicitis, the appendix needs to be surgically removed, through either open surgery or laparoscopy.

Traditional appendectomy is an open surgery that involves a single, but longer incision in the lower right side of the abdomen while the less invasive laparoscopic surgery only requires a few small incisions.

Now, with improved instrumentation and more experienced laparoscopic surgeons, the appendix can be removed entirely through the umbilicus as a single site laparoscopic procedure.

The distinct advantage of the single incision laparoscopic technique is a more cosmetic result (avoiding multiple punctures), and an almost “scarless” result as the wound is less than 2 cm and hidden in the umbilicus.

Under laparoscopy, a thin telescopes (laparoscope), which is attached to a video camera outside the body, assists the surgeon in locating the appendix. Special instruments are then inserted into one of the small incisions to remove the appendix.

There is less post-operative pain and recovery is faster in laparoscopy than traditional open appendectomy. The vast majority of patients are discharged within a day or after laparoscopic surgery.

Though there is less scarring in laparoscopy, it may not be suitable for patients with certain pre-existing medical conditions such as heart disease or chronic obstructive pulmonary disease (COPD). It may also not be suitable for all patients with a ruptured appendix.

If you experience severe lower abdominal pain, don’t delay it, caution Dr Lee. “If it is appendicitis, removing the appendix surgically will eradicate the pain completely. And if it isn’t appendicitis, it is still important to rule out other possible causes of severe abdominal pain such as ovarian cysts or kidney stones,” he explains.

There is an increased adoption of laparoscopy over the last 3 years, since 2009, at SGH, and the hospital performs about 500 appendectomies annually. While 15 per cent were done laparoscopically in 2009, 40 per cent of patients underwent laparoscopic appendectomy in 2011.

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