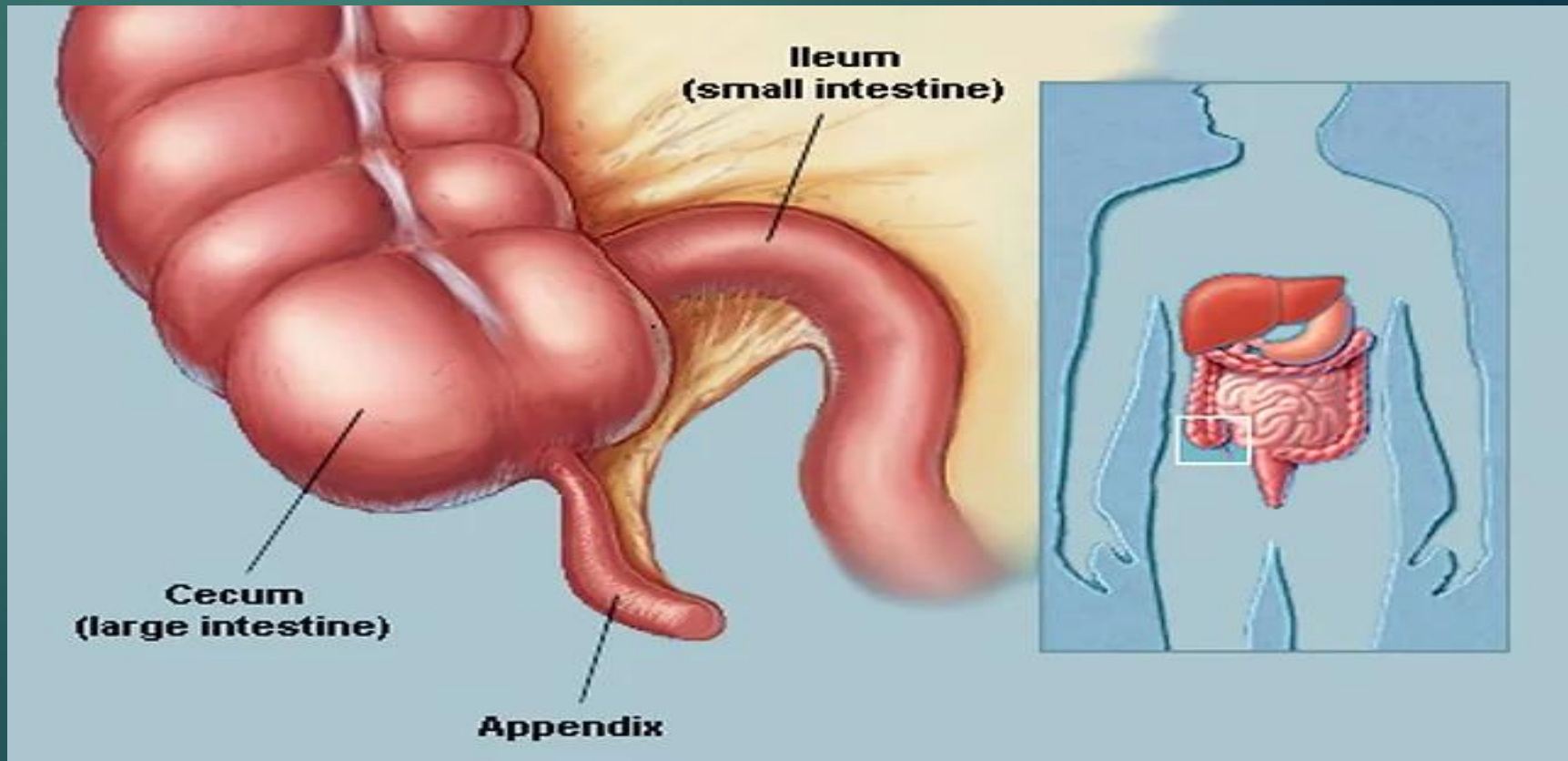
APPENDIX

BY DR.HUSSEIN SAFAA
PLASTIC SURGEON

Appendix

The appendix or vermiform appendix is a blind muscular tube arising from the cecum, the first part of the large bowel.



Gross anatomy

- The appendix arises from the posteromedial surface of the cecum, approximately 2-3 cm inferior to the ileocecal valve, where the three longitudinal bands of the taeniae coli converge.

- It is a blind diverticulum which is highly variable in length, ranging between 2 and 20 cm. The appendiceal mesentery is called the mesoappendix

The tip of the appendix can have a variable position within the abdominal cavity

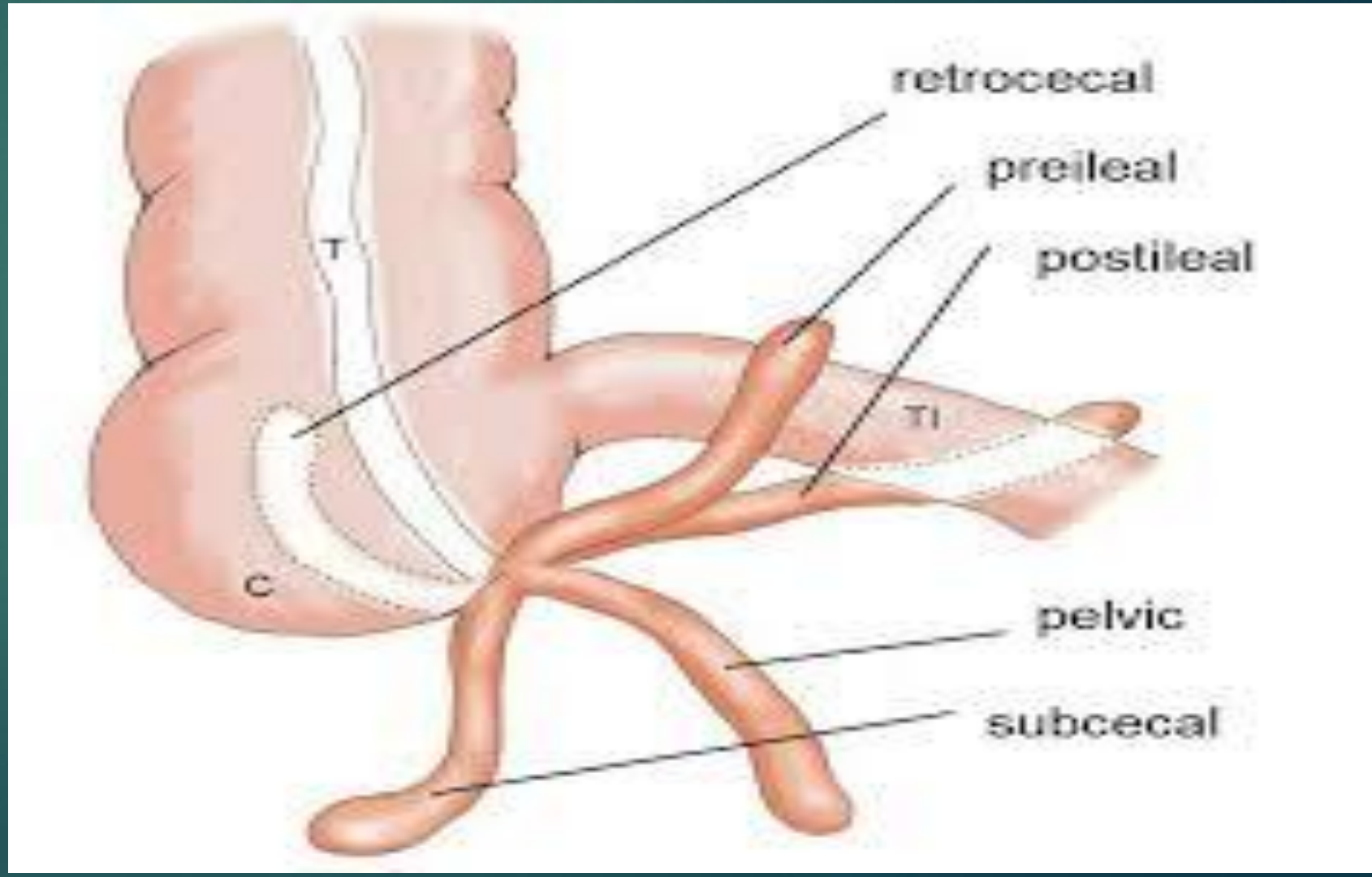
retrocecal (65-70%)

pelvic (25-30%)

pre- or post-ileal (5%)

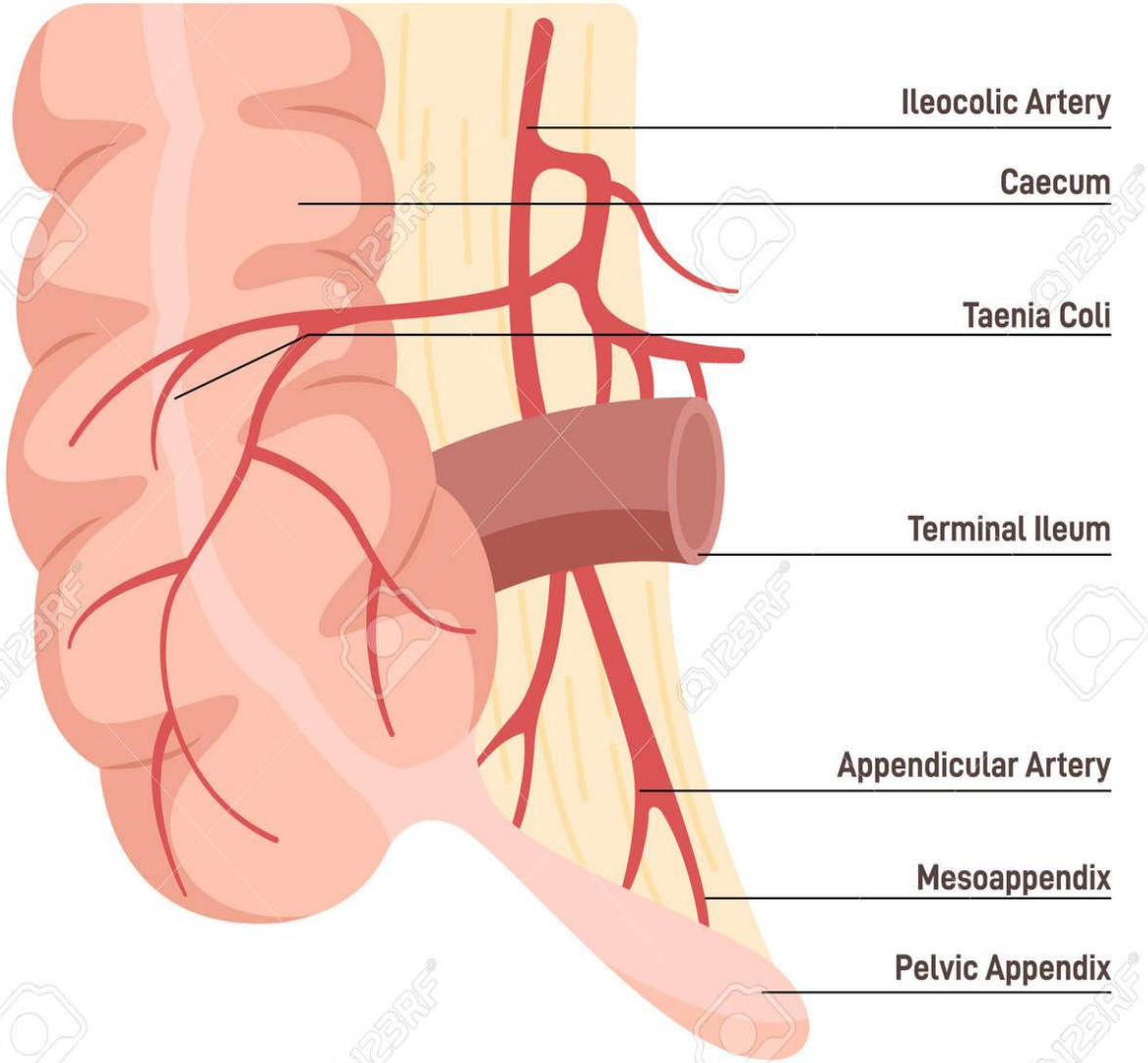
paracaecal

subcecal



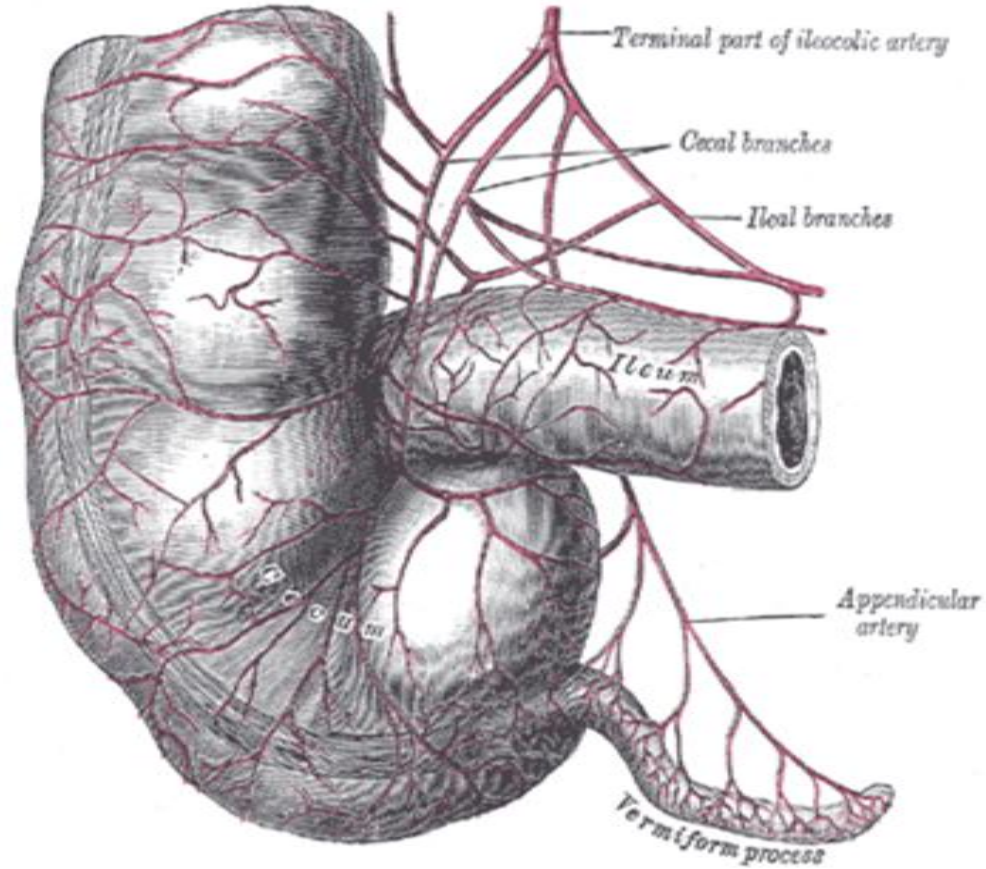
- **Arterial supply**
- appendicular artery, an end artery arising from the ileocolic artery (itself from the superior mesenteric artery)
- **Venous drainage**
- similarly named veins draining to the portal venous system
- **Lymphatic drainage**
- the appendix is rich in lymphoid tissue which peaks around 20 years of age

Appendicitis

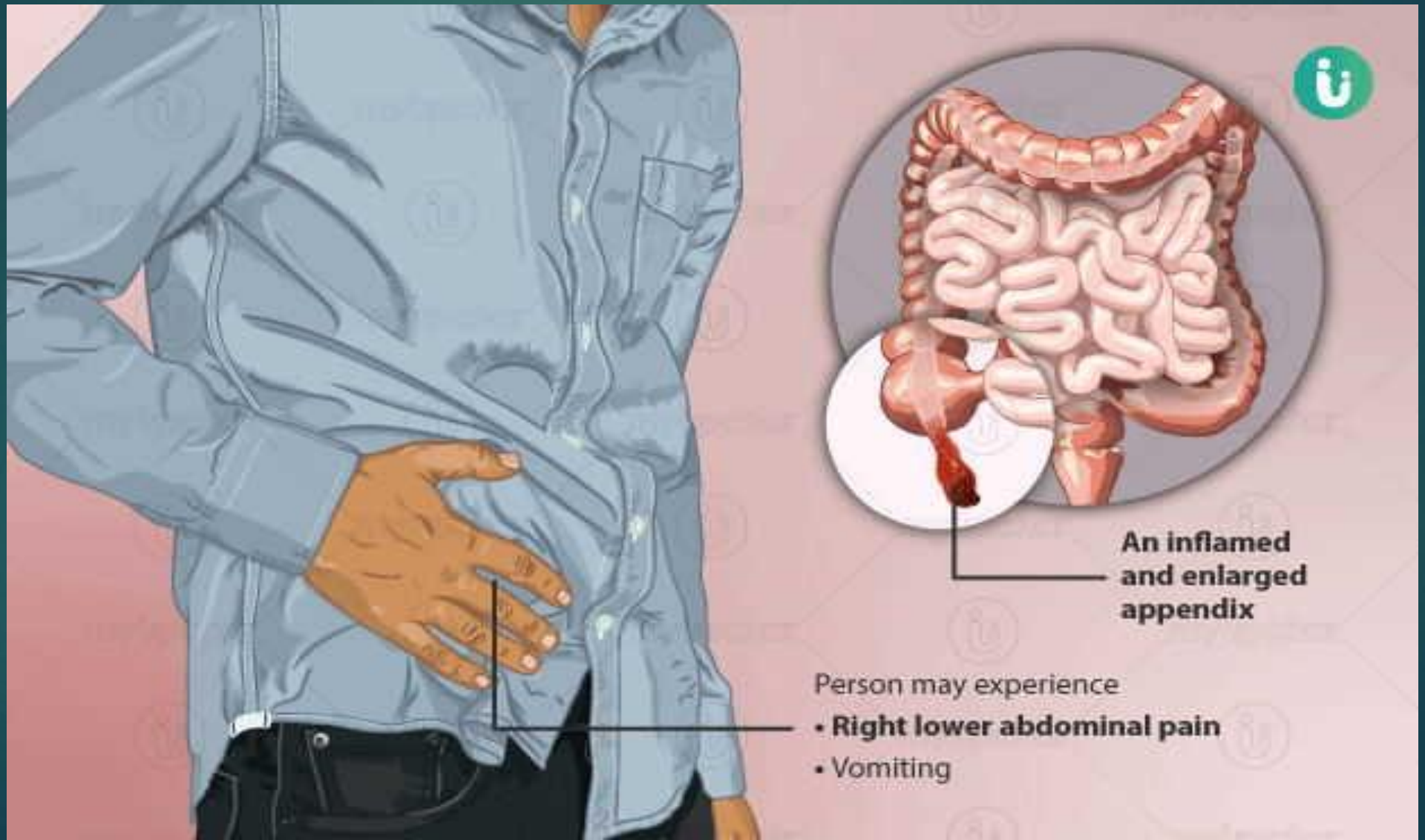


Ileocecal valve

anterior view

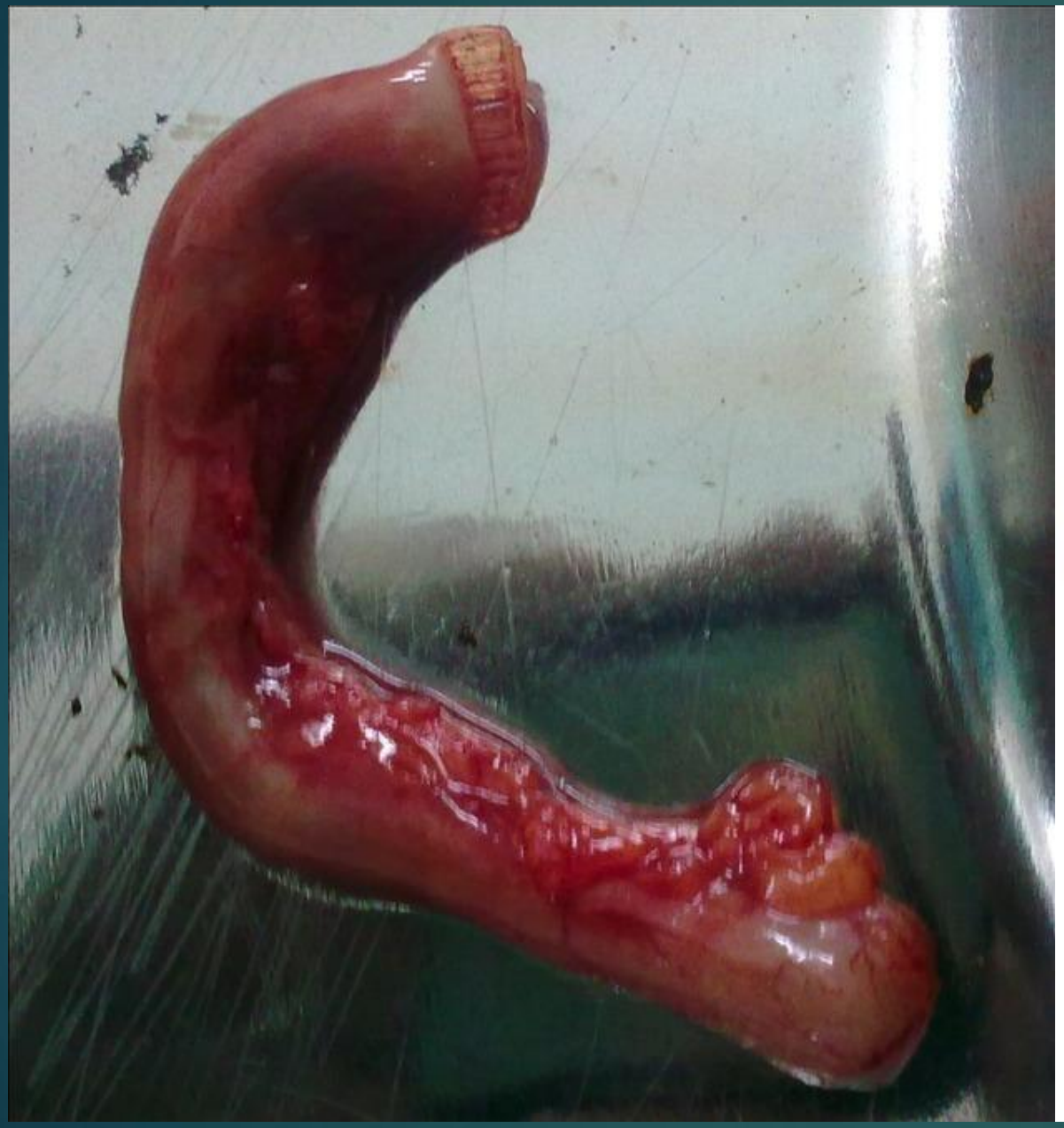


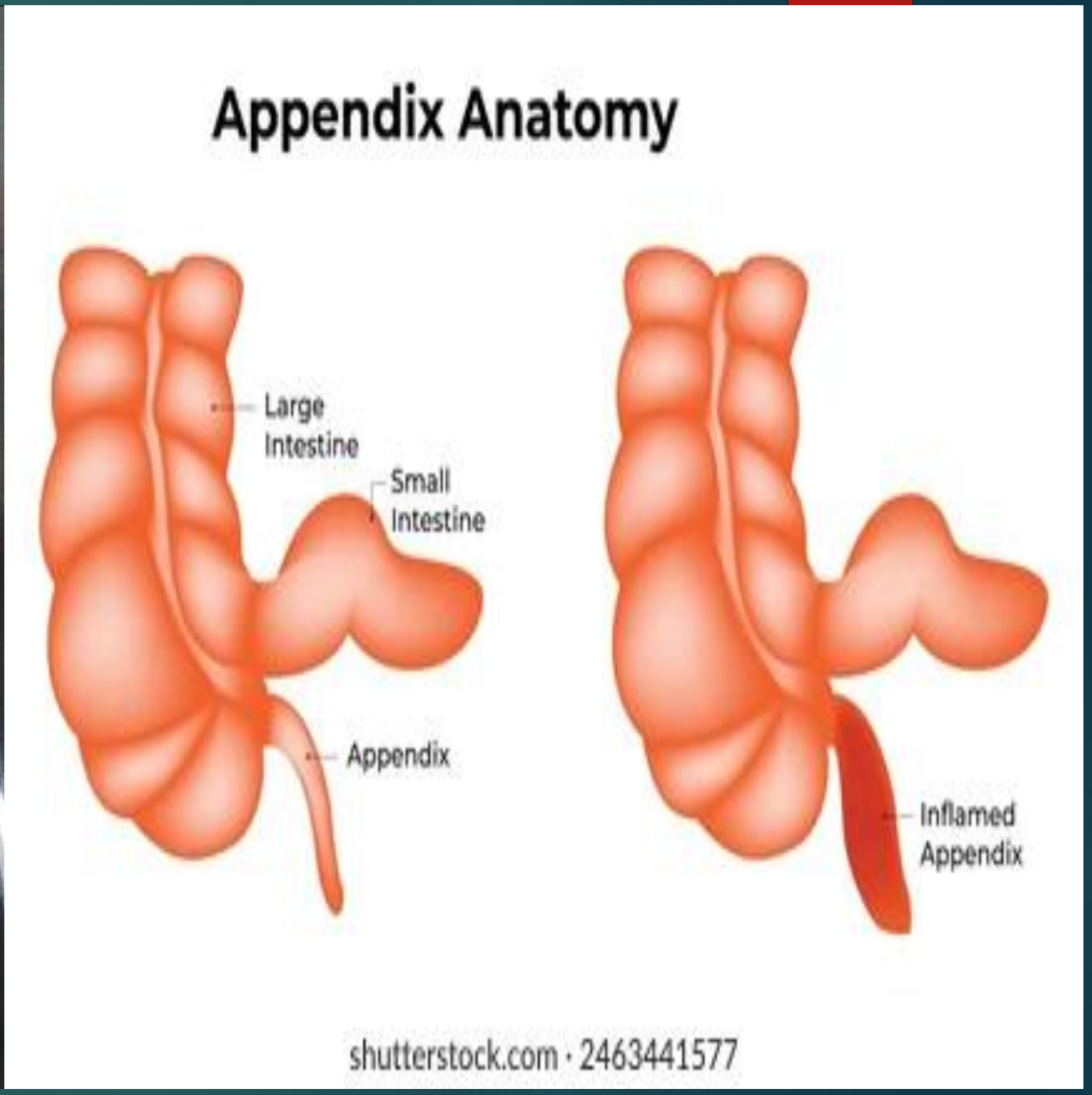
Acute appendicitis



Acute appendicitis

- Acute appendicitis is an acute inflammation of the vermiform appendix.
- It is the most common surgical emergency .
- Acute appendicitis may be simple and uncomplicated or complex, leading to gangrene, abscess, or perforation.
- If the appendix fails to descend normally during development then subhepatic appendicitis may be seen.




Appendix Anatomy
Large Intestine
Small Intestine
Appendix
Inflamed Appendix
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Epidemiology

- Acute appendicitis has a lifetime incidence of about 7%. It is rare in infants less than 2 years old when the appendix is funnel-shaped.
- Maximum incidence is around 20 years old which coincides with peak appendiceal lymphoid tissue.
- Older adults have a higher incidence of perforation and underlying appendiceal tumor .
- Appendicitis is the most frequent non-obstetric emergency in pregnancy and is associated with 10% fetal mortality and 0.5% maternal mortality. The gravid uterus may prevent the omentum from walling off the appendix.

Clinical presentation

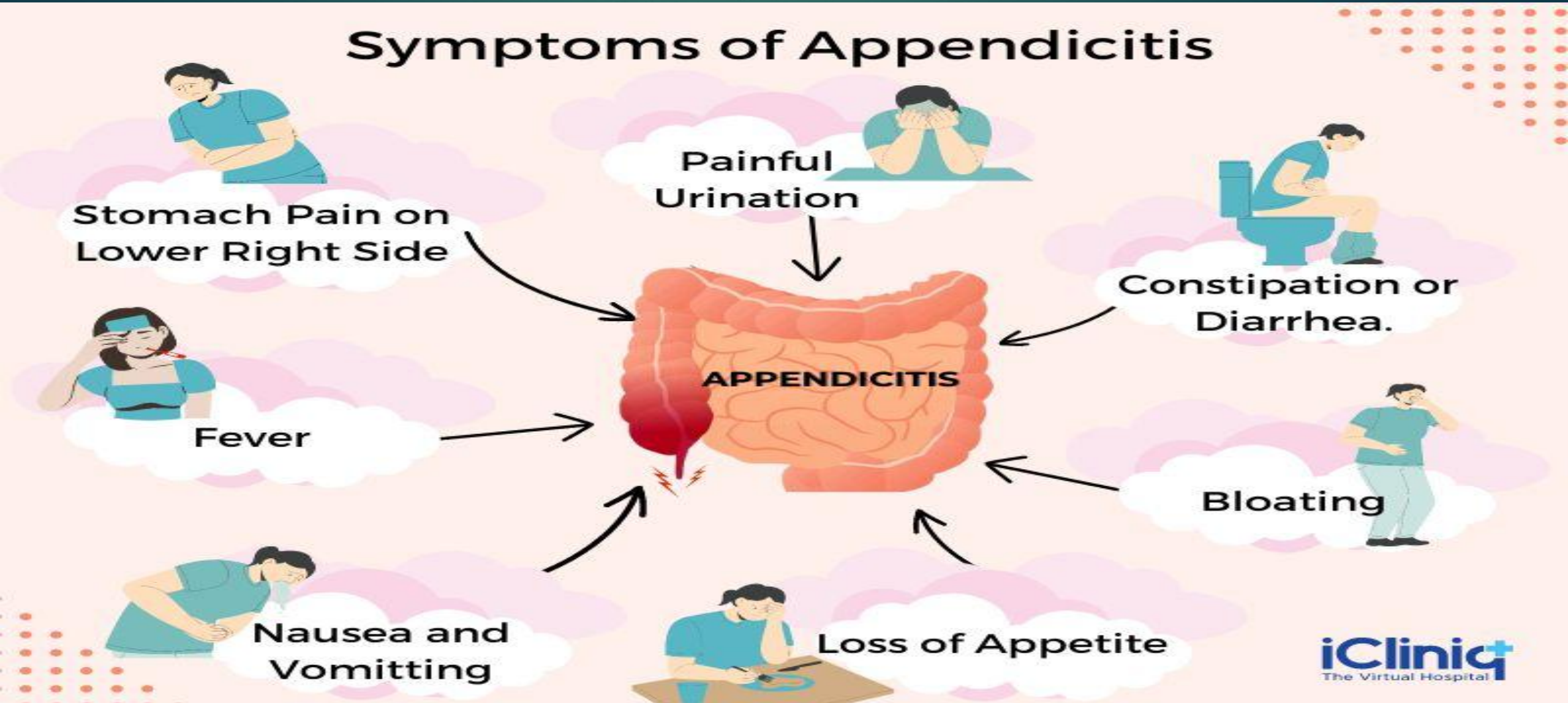
- The classical presentation consists of referred periumbilical pain (T10) which within a day or two localizes to McBurney's point in the right iliac fossa and is associated with rebound tenderness, fever, nausea, vomiting, tachycardia, raised bilirubin and inflammatory markers and other signs of peritonitis .

- This progression is unhelpful in children who often present with vague and non-specific signs and symptoms.

General signs and symptoms include

- fever
- localized pain and tenderness
- rebound tenderness over the appendix (e.g. RIF: McBurney sign)
- pelvic pain, diarrhea, and tenesmus (pelvic appendix)
- flank pain (retrocecal appendix)
- groin pain - appendix within an inguinal hernia or a femoral hernia
- nausea and vomiting
- loss of appetite

Lab testing often reveals **leukocytosis** and an elevated **CRP**, and an elevated bilirubin may also be present.



Pathology

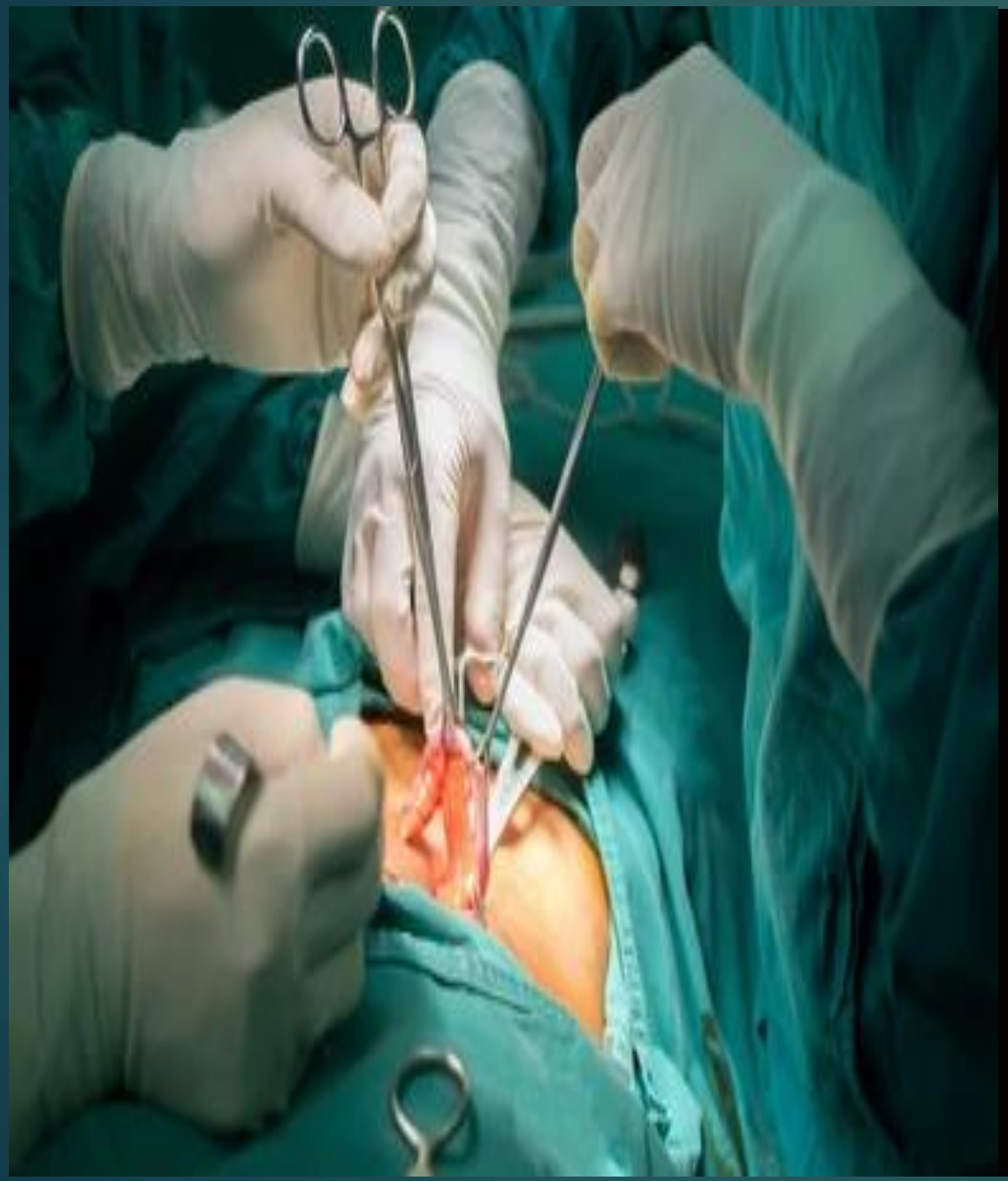
- Appendicitis is frequently caused by obstruction of the appendiceal lumen.
- The appendix continues to secrete mucus which raises intra-luminal pressure causing ischemia, initially antimesenteric, and subsequent gangrene and perforation.
- Stasis also causes bacterial overgrowth and gas formation.
- Age and the presence of an appendicolith are important risk factors for perforation. Obstruction may be caused by;

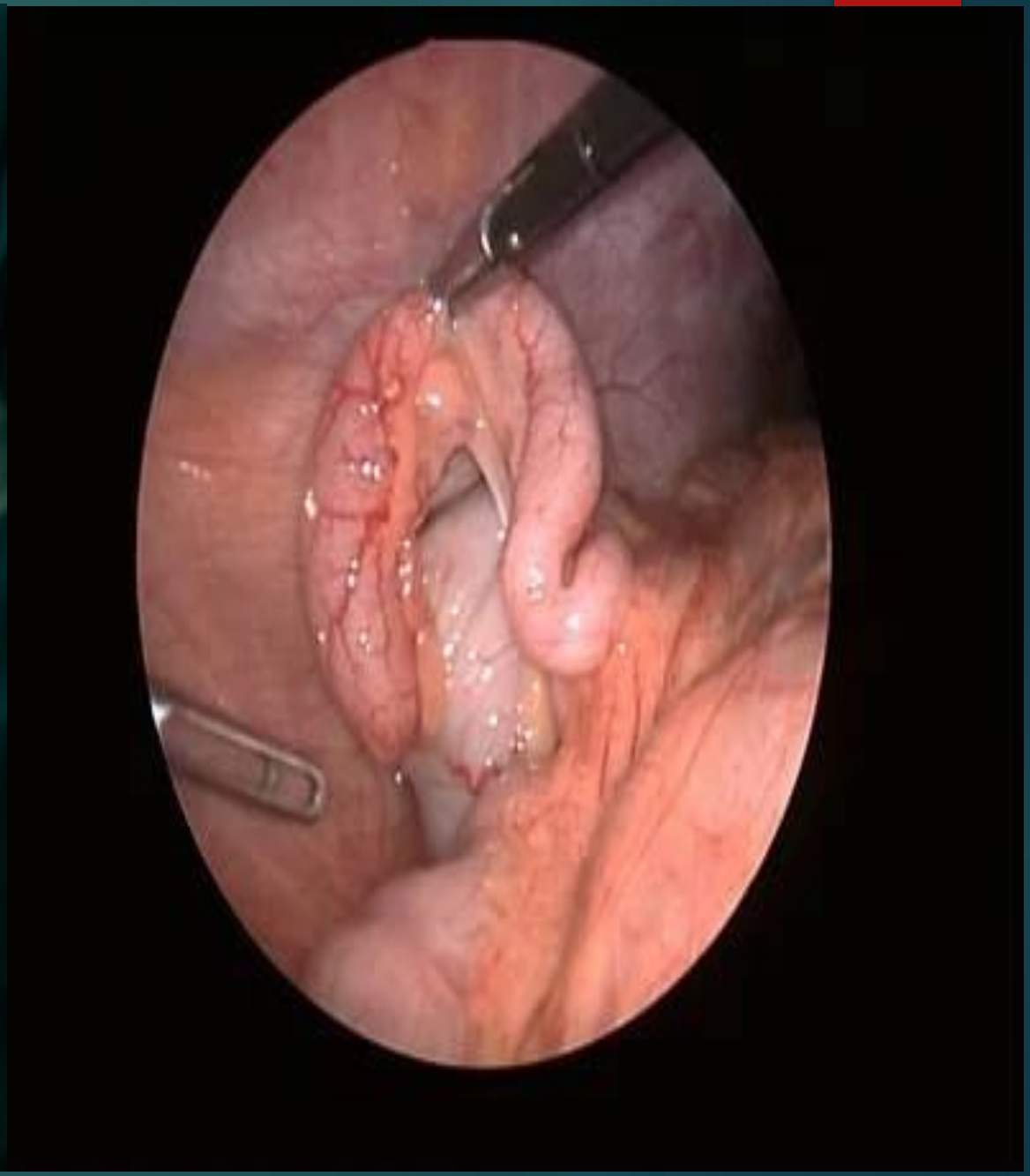
- lymphoid hyperplasia, predominantly in young patients (~60%)
- appendicolith (~33%)
- foreign bodies (~4%)
- Crohn disease or other rare causes, e.g. stricture, tumor, parasite
- appendiceal tumor (usually in patients over 50 years old)

Treatment and prognosis

- Treatment is appendectomy, which can be performed either open (laparotomy) or laparoscopically . Mortality from simple appendicitis is approximately 0.1% but is as high as 5% in perforation with generalized peritonitis .

- In ~30% of cases where the appendix has become gangrenous and perforated, initial nonoperative management is preferred, provided that the patient is stable.
- Smaller collections may be managed with antibiotics and interval appendectomy.





Complications

- Recognized complications include :
- perforation: in 10-20% of cases
- pylephlebitis: infective thrombophlebitis of the portal circulation
- hepatic abscess
- necrotizing fasciitis