<< Acute Appendicitis >>

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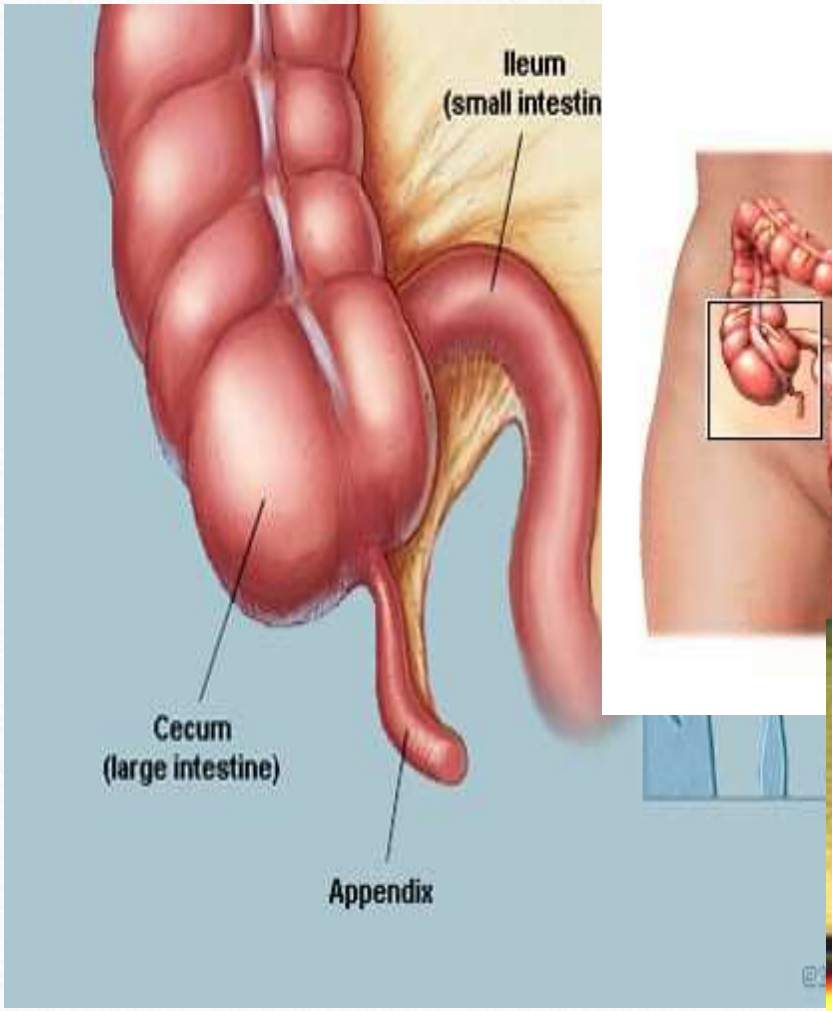
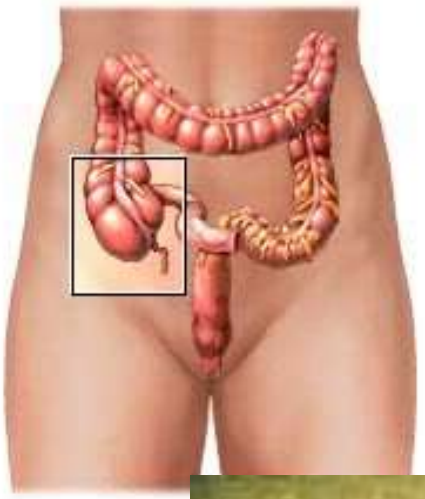
*** Appendicitis** is defined as an inflammation of the inner lining of the vermiform appendix that spreads to its other parts.

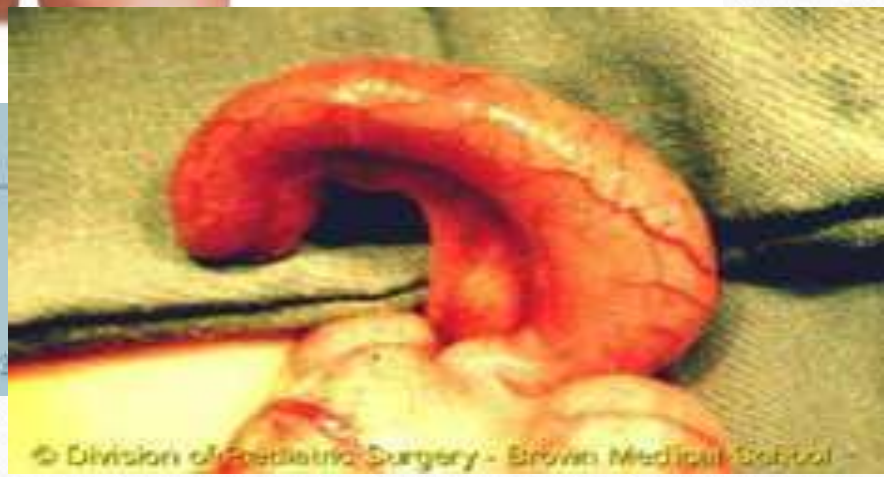
* Epidemiology

- Commonest cause of an acute abdomen and surgical admission in the UK.
- Approximately one in seven people will have an appendectomy.
- It most commonly occurs between 10 and 20 years; it is rare under 3 years of age.

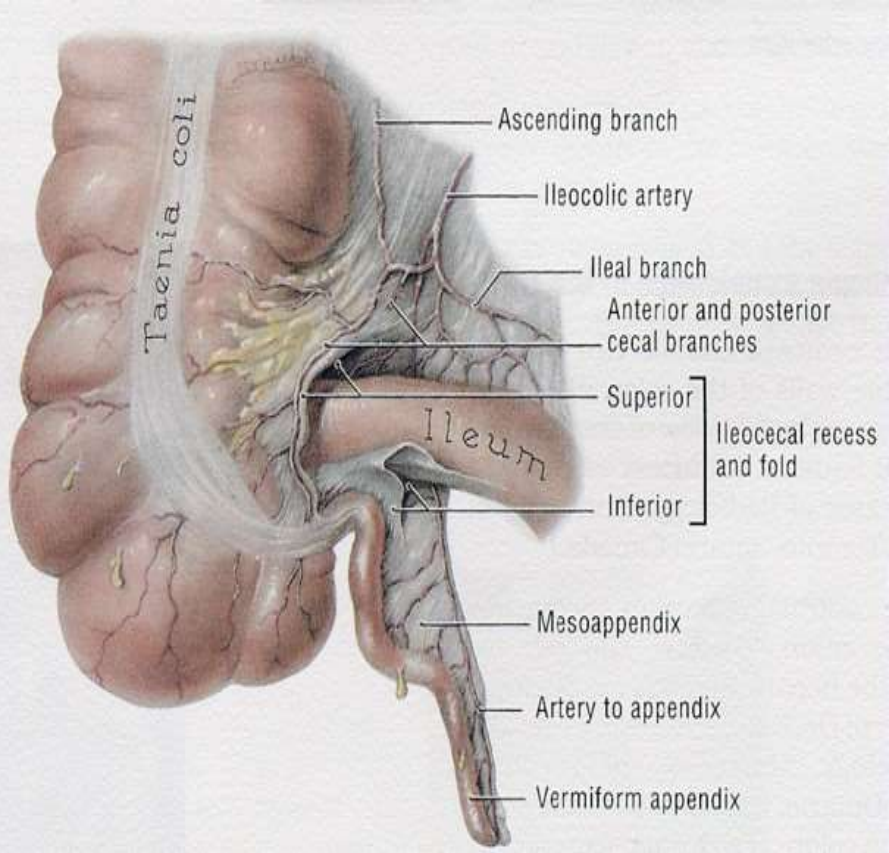

Ileum
(small intestin
Cecum
(large intestine)
Appendix

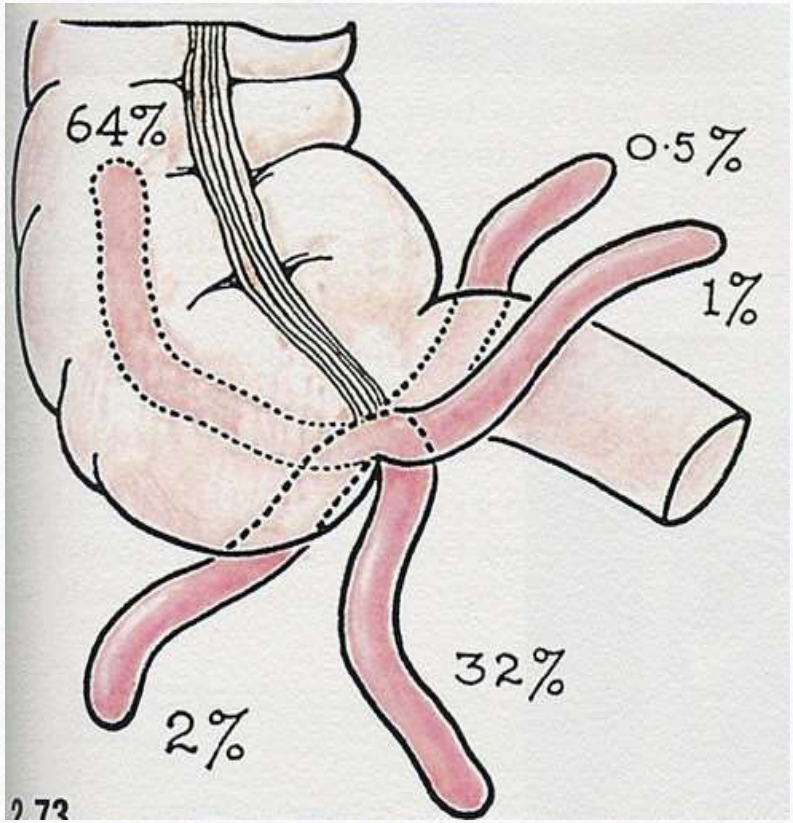



Inflamed appendix



Anatomy



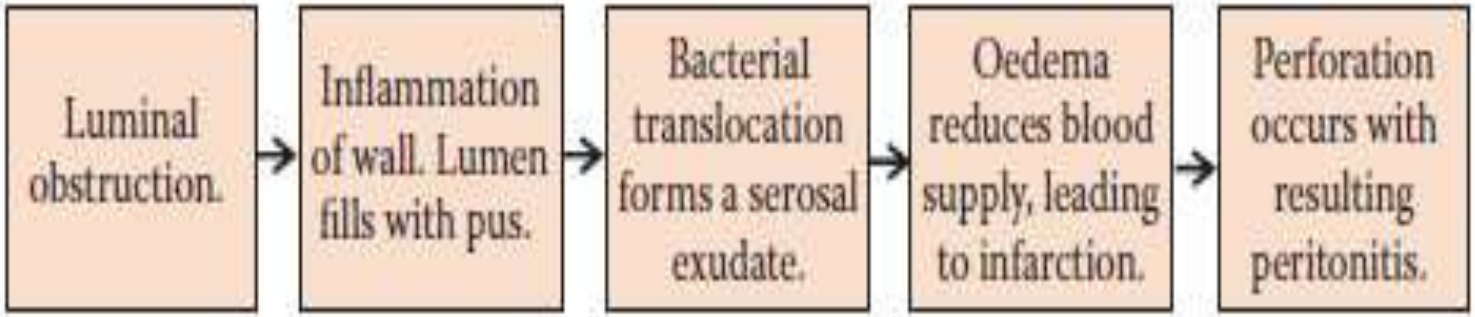


Anatomical variants

localization gives all the symptoms .

Classification – on the stage of destructive changes :

I. Acute appendicitis
II. Chronic appendicitis – result of the not operated resolved acute appendicitis.



Pathological process of acute appendicitis.

Etiology and pathogenesis :

1. Mechanical reason - obturation of the appendix lumen (coprolythiase, bending , foreign body)

↓

luminal hypertension

↓

vessels' compression, interruption of the venous and lymphatic outflow, edema of the organ's wall, vessels' thrombosis

↓

loss of the barrier function of the mucous

↓

penetration of the intestinal flora into the wall of the appendix mural destruction

2. Vascular reason

3. Infectious reason

Clinical features:

Can vary a lot, considering anatomical variations of the **appendix position**

 # Abdominal pain
Initially vague, colicky central abdominal pain.
Visceral pain caused by luminal obstruction of the appendix and stretch of the visceral peritoneum.
Localizing to the right iliac fossa and becoming constant.
The pain changes as the parietal peritoneum becomes involved.

Usually accompanied by a **low-grade fever, nausea, vomiting and anorexia.**

The **appendix position** varies and can result in different symptoms; for example a pelvic appendix may cause urinary symptoms or diarrhea.

On examination there may be general signs of sepsis:
Usually a low-grade pyrexia initially, which may spike up to 38–39°C in the presence of ***perforation*** or ***abscess*** formation.
There may be **tachycardia**, **flushing** and evidence of **dehydration**.

Pain irradiations into :

- the perineum – if pelvic localization
- right lumbar region – if retroperitoneal localization
  right flank
- right hypochondrium – if retrocecal localization
- in mesogastrium - if median localization

Abdominal examination :

Tenderness over **McBurney's** point is the usual feature.
There may also be **signs of peritoneal inflammation**, including:
Guarding, tenderness on percussion, pain on coughing or other movement.

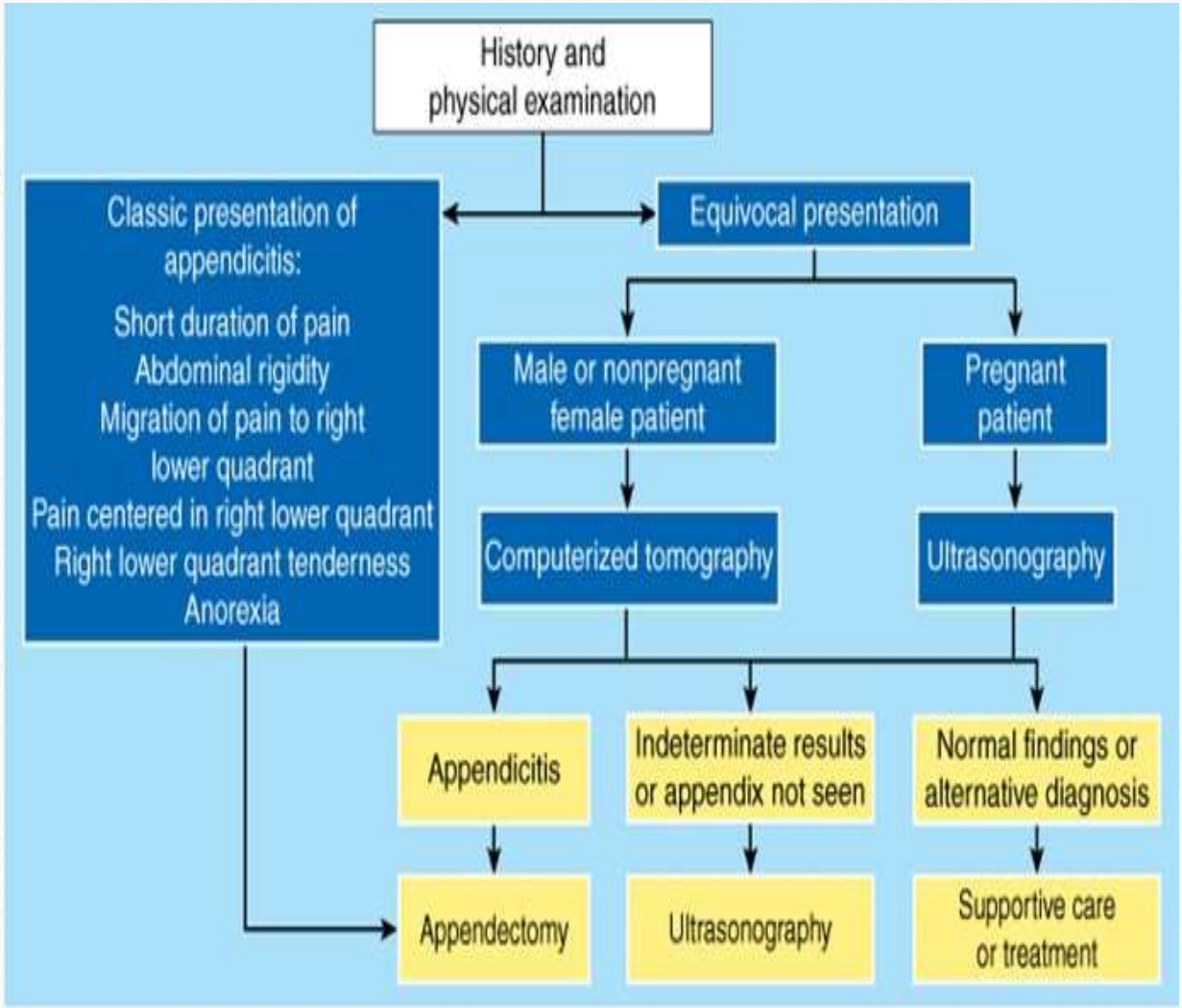
Signs of generalized peritonitis may develop as the illness progresses with abdominal rigidity.

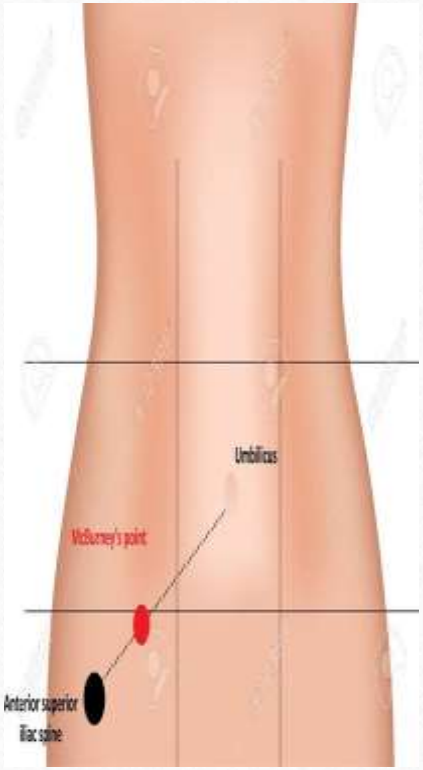
Rovsing's sign: Pain is felt in the RIF when pressure is applied to the LIF.

There must also be **RIF tenderness** for this sign to be positive.

Psoas sign: The patient keeps his or her hip in flexion to relieve his or her pain.
The appendix is anatomically adjacent to the psoas muscle, which is involved in hip flexion.

PR examination may reveal **tenderness anterolateral on the right.**


History and physical examination
Classic presentation of appendicitis:
Short duration of pain
Abdominal rigidity
Migration of pain to right lower quadrant
Pain centered in right lower quadrant
Right lower quadrant tenderness
Anorexia
Equivocal presentation
Male or nonpregnant female patient
Pregnant patient
Computerized tomography
Ultrasonography
Appendicitis
Indeterminate results or appendix not seen
Normal findings or alternative diagnosis
Appendectomy
Ultrasonography
Supportive care or treatment


Umbilicus
McBurney's point
Anterior superior iliac spine

Diagnosis :

The diagnosis of appendicitis is a clinical one; however there are some tests that may be useful, particularly where the diagnosis is not clear-cut. These include:
The performance of a **full blood count (FBC)** can be useful to determine whether or not the patient has a leucocytosis.
A **urinalysis** to exclude urinary tract infection. Although appendicitis may cause a hematuria or pyuria with associated urinary symptoms.
A **pregnancy test** in women of child-bearing age is mandatory to rule out an ectopic pregnancy.
An **ultrasound** scan (USS) in women to exclude tubo-ovarian pathology as the cause of RIF pain
A **computed tomography (CT) scan** can be useful especially in the elderly where a caecal tumor may be causative, or in the obese where examination is difficult.
Diagnostic laparoscopy allows immediate treatment if appendicitis is confirmed.
Urea and electrolytes (U&E) should also be performed to assess hydration status.

ALVARADO SCORING SYSTEM

SYMPTOMS SCORE

	Manifestations
Symptoms	Migration of pain
	Anorexia
	Nausea/vomiting
Signs	RLQ tenderness
	Rebound
	Elevated temperature
Laboratory values	Leukocytosis
	Left shift

Score	Inference
7-10	Strongly predictive of appendicitis
5-6	Equivocal Radiological investigations
1-4	Appendicitis ruled out

Treatment

- Absolute bed rest & NPO
- IV Fluids Supplements
- Analgesics
- Antibiotics
- Appendectomy (within 24 hours ASAP)

Indications of Appendectomy

- Acute Appendicitis
- Recurrent Appendicitis
- Mucocele of Appendix
- Carcinoma

LA	OA
Decreased wound infection rate	Cheaper
Earlier return to normal life	Shorter operating time
Shorter Hospital stay	
Can assess the rest of the abdominal cavity with ease	
? Associated with increased intra-abdominal infections	
More beneficial in obese, females and employed pts	

Complications :

- Abscess formation; peri-appendicular, pelvic or sub-hepatic.
- Post-operative collection or abscess.
- Wound problems, including infection or hematoma.
- Intestinal obstruction due to adhesion formation within the abdomen.

Thank you