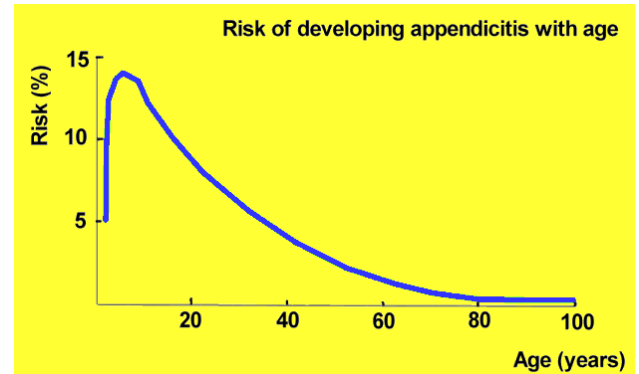


Sudden inflammation of appendix usually caused by obstruction (e.g. by faecolith, lymphoid hyperplasia) of lumen resulting in invasion of appendix wall by gut flora. If it ruptures may → peritonitis, or inflamed appendix may be surrounded by omentum → appendix mass or abscess.

### Epidemiology

- Commonest cause of an acute abdomen.
- 6-10% lifetime risk. The incidence is falling.
- Uncommon aged <2 or >80.
- Accounts for about 2% of hospital admissions
- In only 50% of patients is the preoperative diagnosis correct
- A normal appendix is removed at 10-20% appendicectomies.
- Appendicitis is more common in men.
- Living in the Antarctic (high incidence)



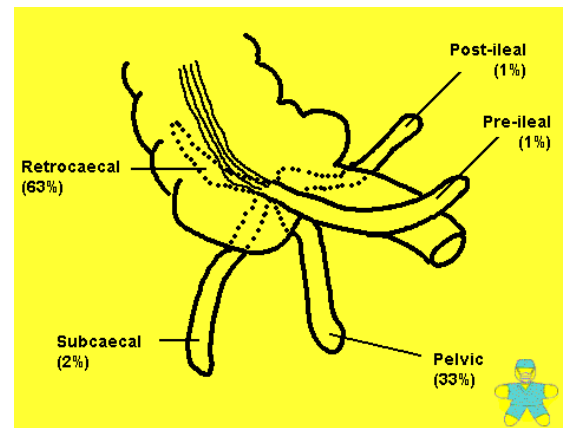
### Presentation

*History:* Classic symptoms often missing.

- Central abdominal pain migrating to right iliac fossa
- Anorexia (60-90%)
- Nausea (75%) & vomiting (55%)
- Constipation or diarrhoea (10%)

*Exam:*

- Low-grade pyrexia
- Localised tenderness in RIF (65%) with guarding (10%) & rebound (50%)
- Rovsing's sign = pain in RIF on palpation of the LIF
- Psoas sign = RIF pain with hyperextension of right hip
- Obturator sign = RIF pain with internal rotation of right hip
- May be maximally tender at McBurney's point & on PR depending on appendix orientation



### Differential Diagnosis

*Causes of right iliac fossa pain*

- Mesenteric adenitis
- Urinary tract infection
- Non-specific abdominal pain
- Pelvic inflammatory disease
- Renal colic
- Ectopic pregnancy
- Constipation

*Causes of right iliac fossa mass*

- Crohn's disease
- Caecal carcinoma
- Mucocele of the gallbladder
- Psoas abscess
- Pelvic kidney
- Ovarian cyst

### Investigations

Essentially a clinical diagnosis.

*Urine:* NB 30% may have RBC or WBC & 15% have bacturia.

*Bloods:* FBC (↑WCC/neut ~80%, Pos LR1.5-2.5), βhCG, CRP (non-specific & often normal early on)

*Imaging:* USS (unable to visualise in ~10%, sens ~85%, spec ~95%), CT (93% sens & 98% spec)

*Other:* Diagnostic laparoscopy (particularly in young F as perforation may → infertility)

## Scoring systems

Alvarado (MANTRELS) score:

Migration of pain	+1
Anorexia/UA ketones	+1
Nausea - vomiting	+1
Tenderness in RIF	+2
Rebound tenderness	+1
Elevated temp	+1
Leucocytosis	+2

Shift left (neutrophils) +1 [This is sometimes removed leaving the Modified Alvarado score out of 9 instead of 10]

Score interpretation:

- <5 unlikely (92-100% NPV), 5-6 possible (imaging/obs).  $\geq 7$ =likely (OT)
- Poorer with F and at extremes of age.

## Computer-aided diagnosis

- Sensitivity 90%
- Decreases perforation & -ve laparotomy rate by 50%.
- But requires hospital to collect & generate local patient DB

## Management

*Supportive:* NBM, IVF, analgesia (opiate analgesia does not mask peritonism)

*Antibiotics:* should not be given until a decision to operate has been made.

*Surgery:*

- If classical signs otherwise may be safely observed for 8-12hrs
- Lower threshold for OT in women of child bearing age.
- Negative appendectomy rate ~10-20%
- Laparoscopy: ↓Operative mortality & morbidity, but time consuming & req expertise.
- Open laparotomy: if normal Appdx check for Meckel's, salpingitis, Crohn's disease

## Complications

- Perforation at presentation ~20% (more common in the young (~50%) & elderly (30%))
- Appendix abscess: surgical drainage.
- Appendix mass: Initial Rx - fluids, analgesia & ABx. OT if mass enlarges or patient deteriorates otherwise consider delayed OT in ~3mo.
- Post-op wound infection 5-20%, decreased by perioperative antibiotics
- Other acute Cx include pelvic abscess, subphrenic abscess, paralytic ileus & septicaemia.
- Long term complications: adhesions (uncommon), infertility (females)
- Stump appendicitis
- In pregnancy miscarriage rate 5% if non-perforated or up to 30% if perforated.

## Prognosis

- Mortality: Non-perforated appendicitis <0.1%, perforated 0.5%