



Acute Appendicitis

Take home points

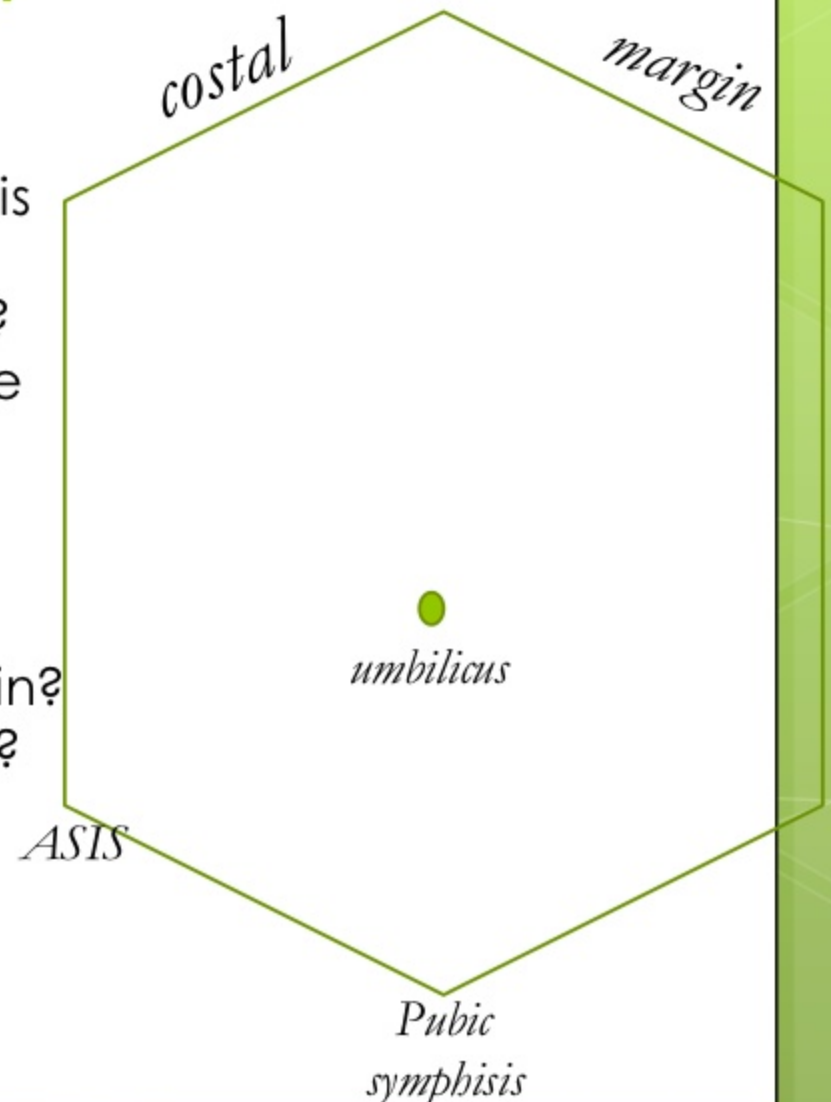
- Appendicitis is common- **7-9% lifetime risk**
- Delay in diagnosis/management causes significant morbidity- **can be a surgical emergency**
- Usually clinical diagnosis- not reliant on imaging
- Has classic presentation but often presents atypically- it is a common pitfall!

What is appendicitis? Who gets it?

- Appendicitis = Inflammation of the appendix.
- Obstruction of opening → distention → perforation
- Mostly young people (age 10-20) but can present at any age
- M>F (1.4:1)
- Common – 7-9% lifetime risk

Relevant Anatomy

1. Where is the appendix? What is it attached to?
2. Where is McBurney's point and what is it?
3. What places can the appendix hide?
4. What nerve root (roughly) supplies the appendix and where does it refer visceral pain to?
5. What are some other things near the appendix?
6. What organs cause R sided abdo pain?
7. What organs cause lower abdo pain?

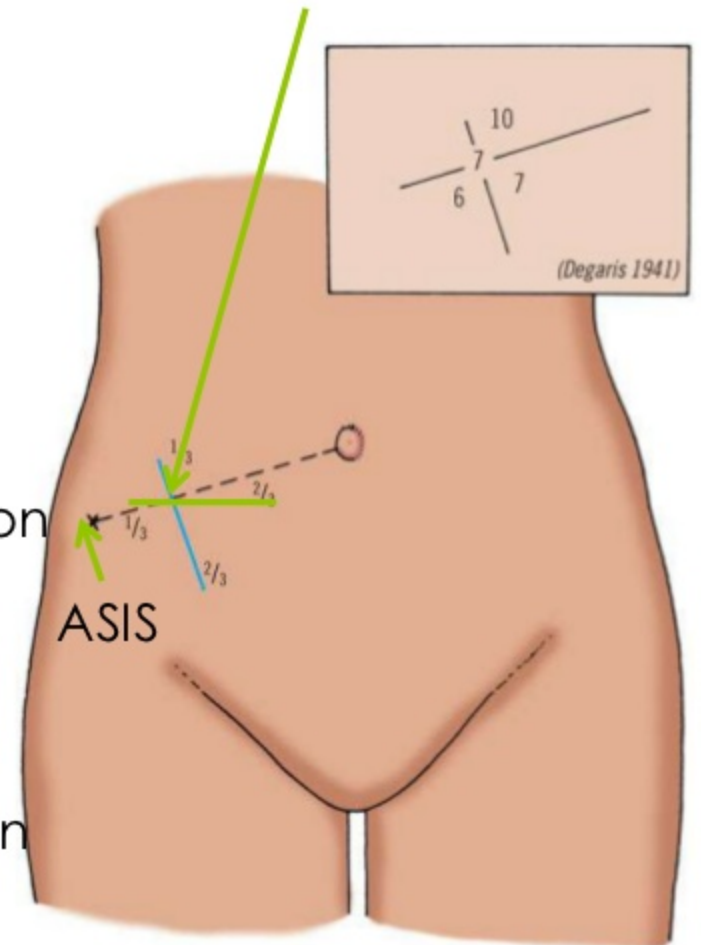


Relevant Anatomy

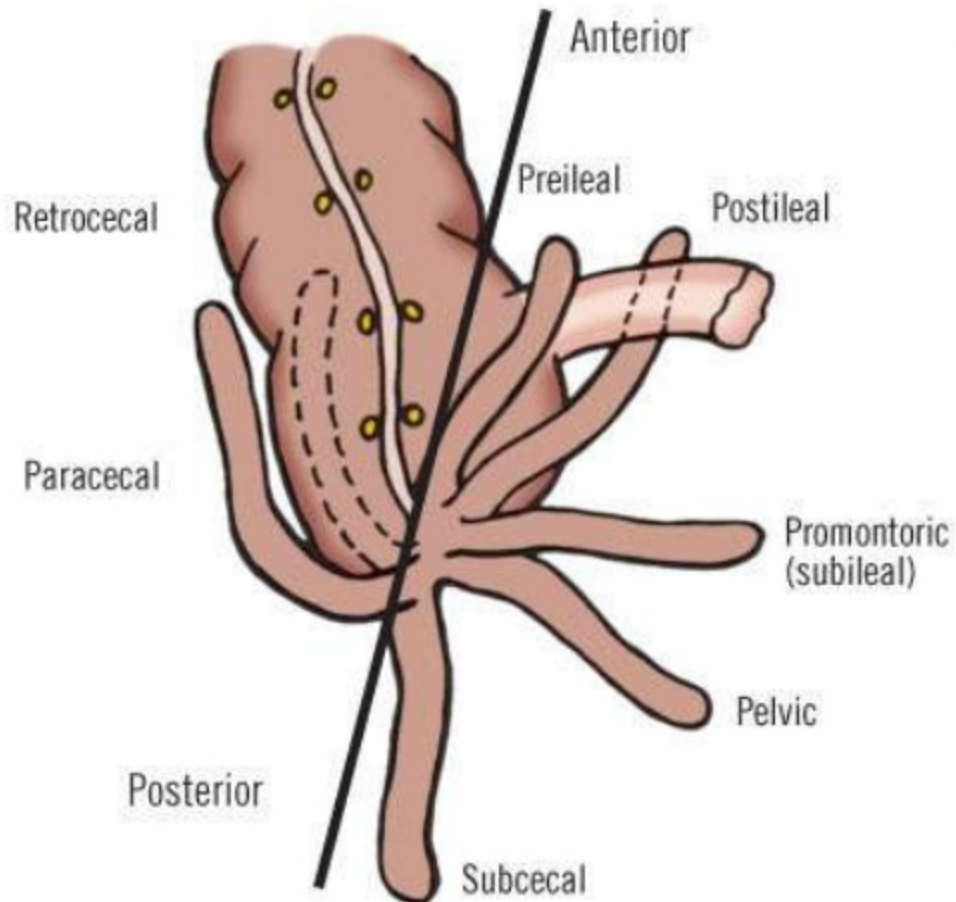
1. The Appendix is...



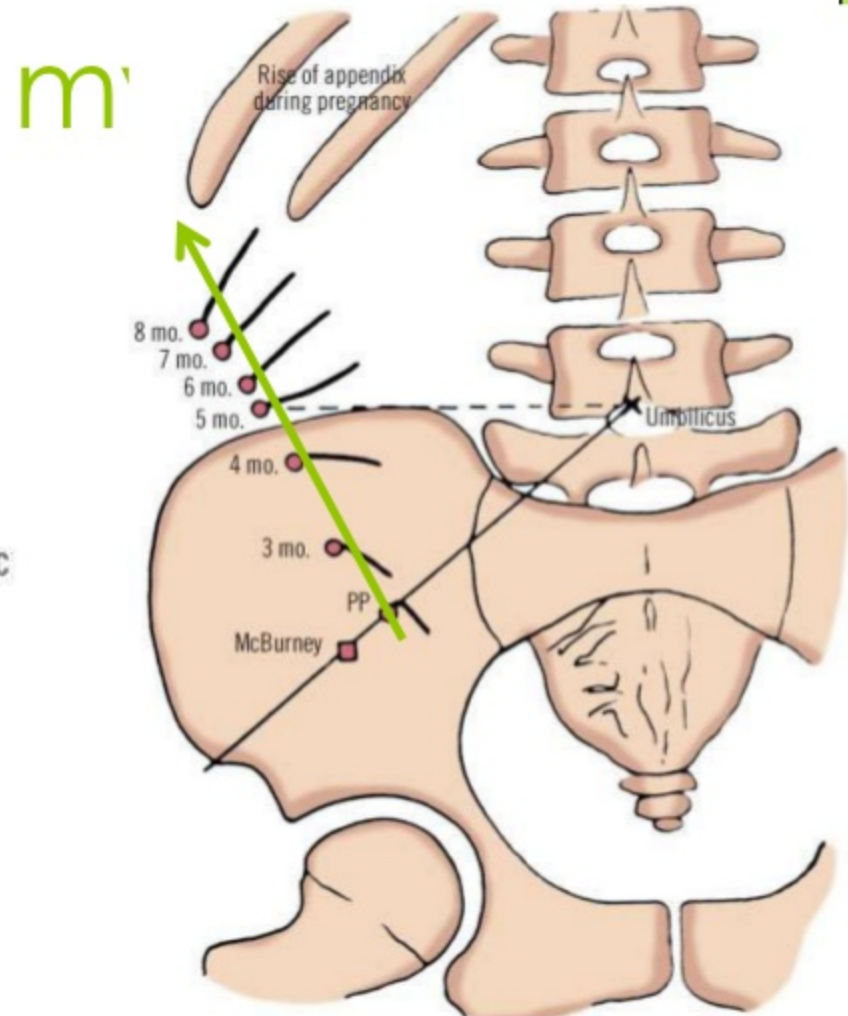
2. McBurney's Point



3. Places the appendix can hide...



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... and during pregnancy

Paired organs

unpaired



Midgut
(inc. appendix)

Hindgut
Lower urinary tract
Sexual organs

T6

costal

margin

T10
umbilicus

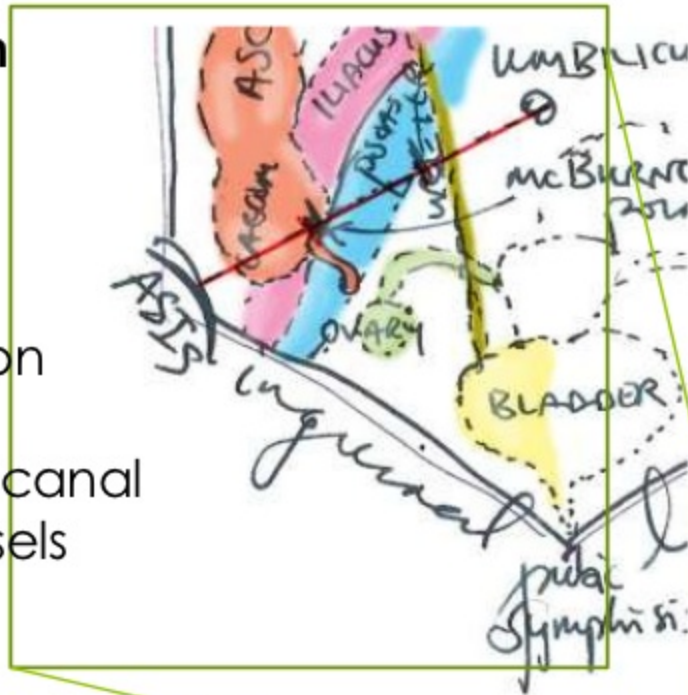
T12

Pubic
symphysis

Relevant Anatomy

5. Structures near the appendix

- **Caecum**
- **Ileum**
- **Ureter**
- **Ovary**
- **Bladder**
- Asc Colon
- Psoas
- Inguinal canal
- Iliac vessels



6. R abdominal pain



7. Pelvic/lower abdo pain

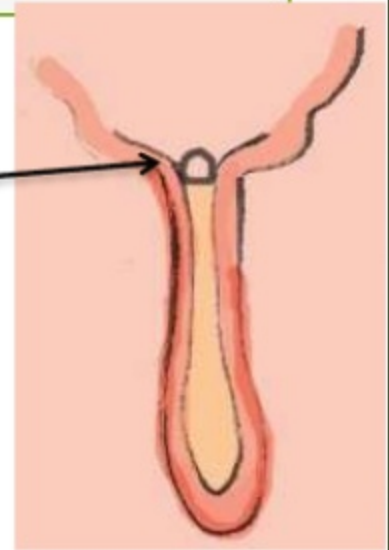
“Typical” Presentation

- Dull, crampy central abdo pain
- Malaise/vomiting/anorexia/low grade fevers
- Pain worsens & localises to RIF with cough/movement tenderness
- Systemic symptoms

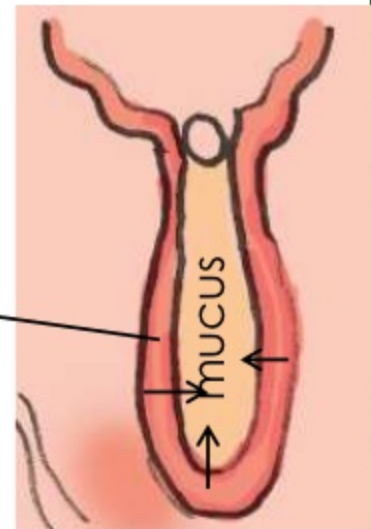
Early Appendicitis

- Pain:
 - Location: Periumbilical (T10)
 - Character: Dull
 - Over time: Colicky
 - Associated symptoms:
 - Vomiting
 - Anorexia

obstruction

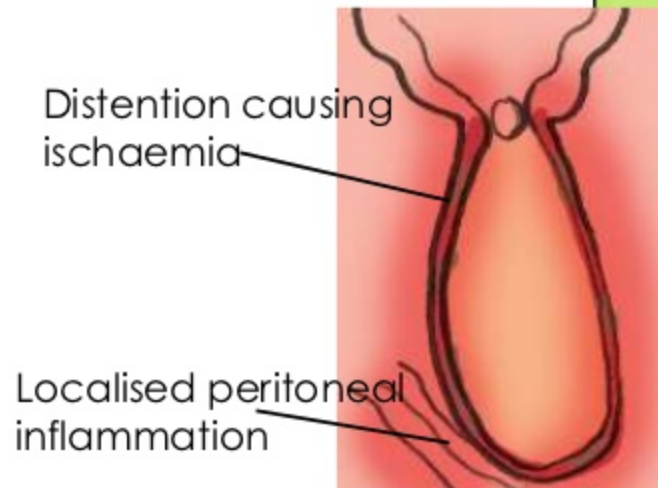


distention



Later Appendicitis

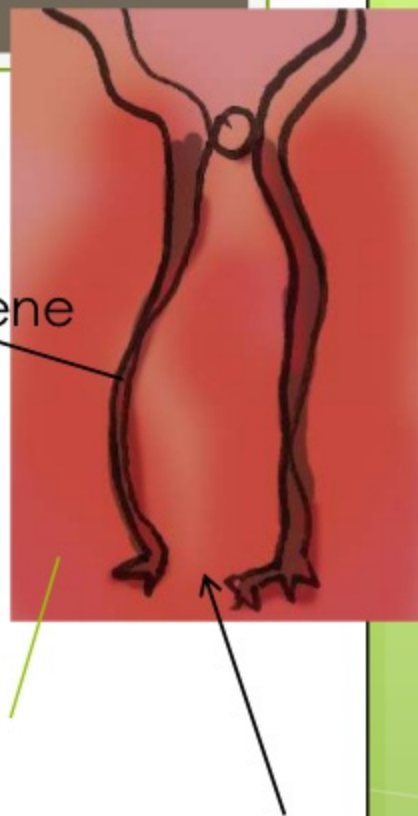
- Pain:
 - Location: R Iliac Fossa
 - Character: Localised
 - Over time: Constant
 - Aggravating: going over bumps, coughing, walking
 - Relieving: hip flexion, staying still
- Exam findings:
 - “peritonism”
 - Guarding
 - rebound tenderness
 - percussion tenderness
 - Rovsing, psoas, other signs



Late Appendicitis

- Pain:
 - Location: lower abdominal/generalised
 - Character: diffuse, severe
 - Over time: constant
 - Aggravating: movement, coughing, palpation, rebound
 - Associated: Fever
- Exam findings:
 - Systemic features- fever, tachycardia, hypotension
 - Abdominal – severe, generalised “peritonism”
 - RIF mass (sometimes)

Gangrene

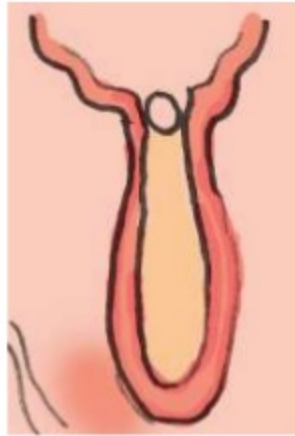
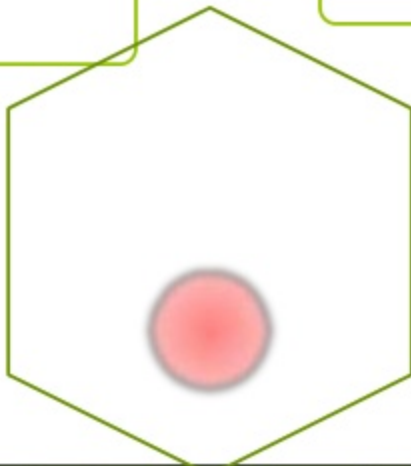


Time Course



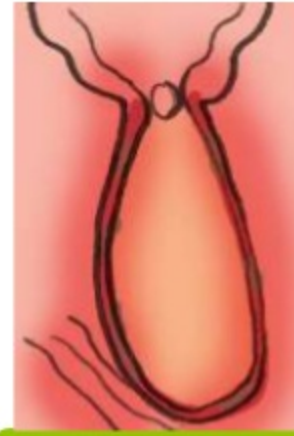
Appendiceal obstruction/early appendicitis – visceral peritoneal irritation

- Periumbilical colicky pain



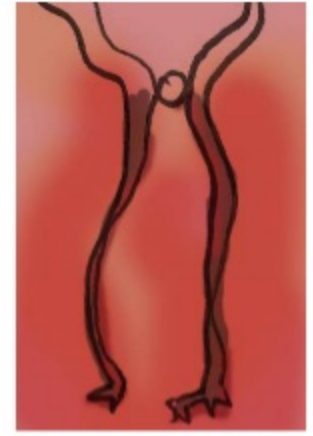
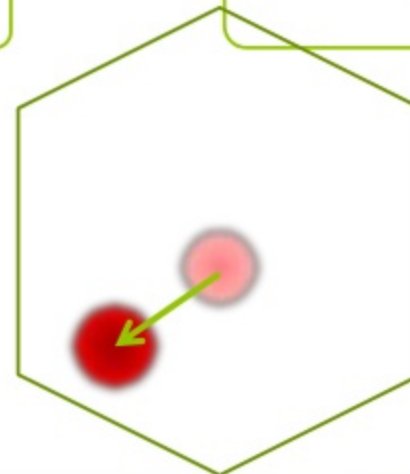
Appendiceal distension

- Anorexia, vomiting, malaise



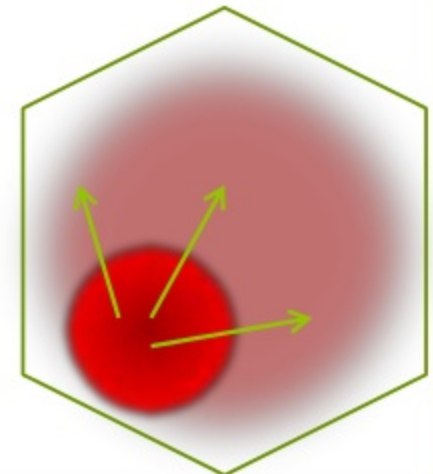
Irritation of parietal peritoneum (localised)

- Constant RIF pain, pain on coughing, going over bumps etc



Perforation, localised / generalised peritonitis, mass

- **Fever/Sepsis**



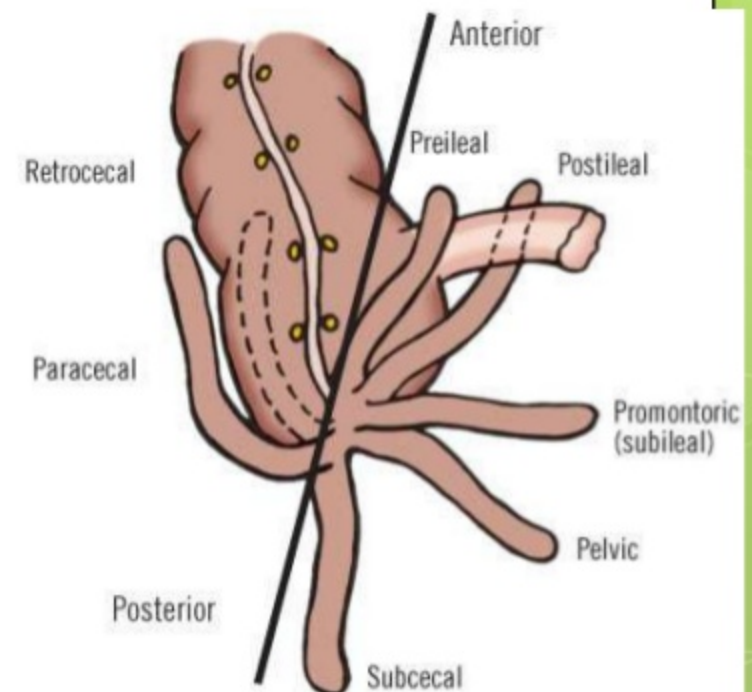
Special Clinical signs

- Abdominal examination
- Psoas Sign – pain on hip extension
- Rovsing Sign – RIF pain on palpating LIF
- “The walk” – walk with R hip flexed, bent over
- Pain on coughing/unable to cough



Atypical presentations

Location of appendix	Signs/symptoms
McBurney's point	"typical" presentation, Rovsig sign
Retro/paracaecal	Psoas sign/flank pain/absence of peritonism
Retro/paraileal	Diarrhoea, crampy pain
Pelvic	Suprapubic pain, urinary frequency, pyuria



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Complications

- Rupture and sepsis
- Periappendiceal Abscess
- Death

Clinching the diagnosis

- Appendicitis is usually a clinical diagnosis- ie history + examination.
- However sometimes you're just not sure!
All those ovaries, fallopian tubes, ureters, atypical presentations...
- ...perhaps you could order some tests?

What to order?

1. What things could support your diagnosis?
 - ie inflamed/infected/obstructed appendix
2. What things could rule in or rule out other diagnoses?

Diagnostic scoring

- Alvarado score

- RIF tenderness +2
- Increased WCC +2
- Pain that migrates to RIF +1
- Rebound tenderness +1
- Anorexia +1
- Nausea/Vomiting +1
- Fever +1
- WCC- 'left shift' +1

- 1-4: Very unlikely
- 5-6: Possible
- 7-8: Very probable
- 9-10: Definite

What to order?

1. What things could support your diagnosis
 - ie inflamed/infected/obstructed appendix
2. What things could rule out other diagnoses
 - ie gastro, sbo, ovarian problems, PID, UTI, renal colic, diverticulitis, crohn's ectopic etc etc