Acute abdominal pain

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See also: *Functional abdominal pain guideline.* ***Click*** *to skip straight to management pathway*

Key points

- Pain related to gaseous distension and faecal loading from **constipation** is a very common cause of abdominal pain in children – remember to ask about Bristol stool type, frequency, history of straining or bleeding PR.
- **Appendicitis in very young children** often presents late with perforation and sepsis, and without classical signs. Keep an open mind when seeing child young children and neonates with non-specific signs and abdominal pain.

  Children < 2 years with abdominal pain must be assessed by a Registrar or Consultant before discharge
- **Analgesia should be used** and will not mask potentially serious causes of pain
- **Recurrent attendances to CED with abdominal pain** in the same illness should necessitate paediatric surgery review
- **Acute surgical pathology can make children very unwell** – all children directly referred to the paediatric surgical team requires an "eyeball review" by the CED senior *as a minimum*

Assessment

Questions to ask:

- Timing of pain in relation to assoc. symptoms – pain first then vomiting or vice versa?
- Exacerbating / alleviating factors – pain associated with eating etc.?
- Constitutional symptoms e.g., fever, weight loss, night sweats
- Bullying/stressors at school? Anxiety?
- History of trauma (think abdominal or chest)?
- For those with female reproductive organs – LMP, menstrual cycle, sexually active?

Associated symptoms:

- Vomiting *(bilious – consider malrotation, volvulus or other obstruction)*
- Change in bowel habit e.g. constipation / diarrhoea *(diarrhoea – gastroenteritis, if bloody: IBD, Meckel's diverticulum)*
- Dysuria / increased frequency *(consider UTI)*
- Polyuria / polydipsia *(consider DKA)*
- Loss of appetite *(consider appendicitis)*
- Cough and fever *(consider pneumonia)*
- URTI symptoms *(consider mesenteric adenitis)*
- Rash / joint pain *(consider HSP)*

Past medical/surgical history

- Previous abdominal surgeries *(consider adhesions / obstruction)*
- Sickle cell disease *(consider vaso-occlusive crisis)*
- Inflammatory bowel disease *(consider toxic megacolon)*
- Hirschsprung's disease *(consider enterocolitis)*
- Hx of gynaecological problems?

Specific features in the examination not to miss:

- Does child look seriously ill? Think peritonitis or sepsis
- Signs of **peritonitis**: rebound tenderness, guarding, rigidity, reluctance to move
- Signs of **obstruction**: abdo distension, absent bowel sounds, bilious vomiting
- Temperature <38ºC – think appendicitis, >38ºC – think pneumonia, UTI, sepsis
- Purpuric rash? Think HSP or meningococcal septicaemia
- Signs of respiratory distress? Crackles, fever, cough - think pneumonia
- Abdominal exam: masses (sausage shaped in intussusception), hernial orifices, testes

Some causes of abdominal pain (time critical underlined in red) – list is not exhaustive

Differentials	Significant features
Constipation	Left sided / suprapubic pain, infrequent passage of type 1 – 2 stools, palpable faecal masses. If acute look for organic causes (i.e. obstruction)
Gastroenteritis	Diarrhoea and / or vomiting, other household members affected
Appendicitis	Migration of pain from central to RIF, anorexia, fever, tachycardia, raised CRP
Intussusception	Usually <2yrs, drawing up knees, intermittent pain with inc. frequency, vomiting (sometimes with bile), red currant jelly stool (late sign)
Mesenteric adenitis	High fever, RIF pain with fluctuating severity, current or previous URTI. Likely to be well and hungry
Hirschsprung's disease	Congenital agangliosis of bowel. Associated functional obstruction. Usually presents in < 1 years with severe constipation or failure to pass meconium.
Meckel's diverticulum	Usually < 2 years old. Painless rectal bleeding and symptoms of obstruction
Testicular torsion	Sudden onset swollen, tender testicle. More common > puberty
Volvulus	Usually < 1 year. Twisting of bowel with obstruction and ischaemia. Bilious vomiting and distension.
Incarcerated hernia	Painful enlargement of hernia +/- symptoms of bowel obstruction
Haemolytic Uraemic Syndrome (HUS)	Microangiopathic haemolytic anaemia, thrombocytopenia, and nephropathy, can occur as a complication of gastroenteritis caused by E.Coli 0157. Abdominal pain is a common presenting symptom.
UTI	Dysuria, fever, urine frequency, urine dipstick +ve for nitrites / leucocytes
HSP	Non-blanching rash, haematuria / proteinuria, joint swelling
Lower lobe pneumonia	Fever, cough, tachypnoea
Diabetic ketoacidosis	Polyuria, polydipsia, weight loss, BM>15, metabolic acidosis and ketosis
Trauma	Always consider NAI.
Cholelithiasis /cholecystitis	Recurrent, episodic RUQ pain. Often after eating, esp fatty foods. May be assoc nausea, vomiting, and anorexia. Persistent pain and fever +/- referred pain to R shoulder = cholecystitis. Risk factors e.g. sickle cell disease, cystic fibrosis
Menarche	Associated breast development.
Pregnancy	Sexually active, vomiting, positive pregnancy test
Mittelschmerz	One sided, sharp pain lasting a few hours, in middle of menstrual cycle
PID	Fever, lower abdominal pain, discharge, dyspareunia
Ectopic pregnancy	Pain > 5-8 weeks after LMP,
Ovarian torsion	Sudden, sharp unilateral pain with nausea + vomiting

Investigations to consider: NB. Investigations are not always needed. Be guided by the signs and symptoms

- Urine dip & pregnancy test (all girls > 12 years old)
- Consider blood glucose
- Bloods to consider: FBC / U&E / LFT / amylase or lipase / CRP
- CXR if signs of pneumonia

After referral to Paediatric Surgery or Gynaecology, additional investigations may include abdominal X-ray, or abdominal USS / CT

Surgical red flags:

Appendicitis score

Sign / Symptoms	Score
Fever > 38 ºC	1
Anorexia	1
Nausea or vomits	1
Pain on cough / percussion or hopping	2
RIF tenderness	2
Migration of pain (from central to RIF)	1
WBC > 10	1
Neutrophils > 7.5	1

Likelihood of appendicitis increases with total score. **Score > 6:** appendicitis likely. **Score 3 – 6:** borderline. Consider imaging. **Score < 3:** appendicitis unlikely

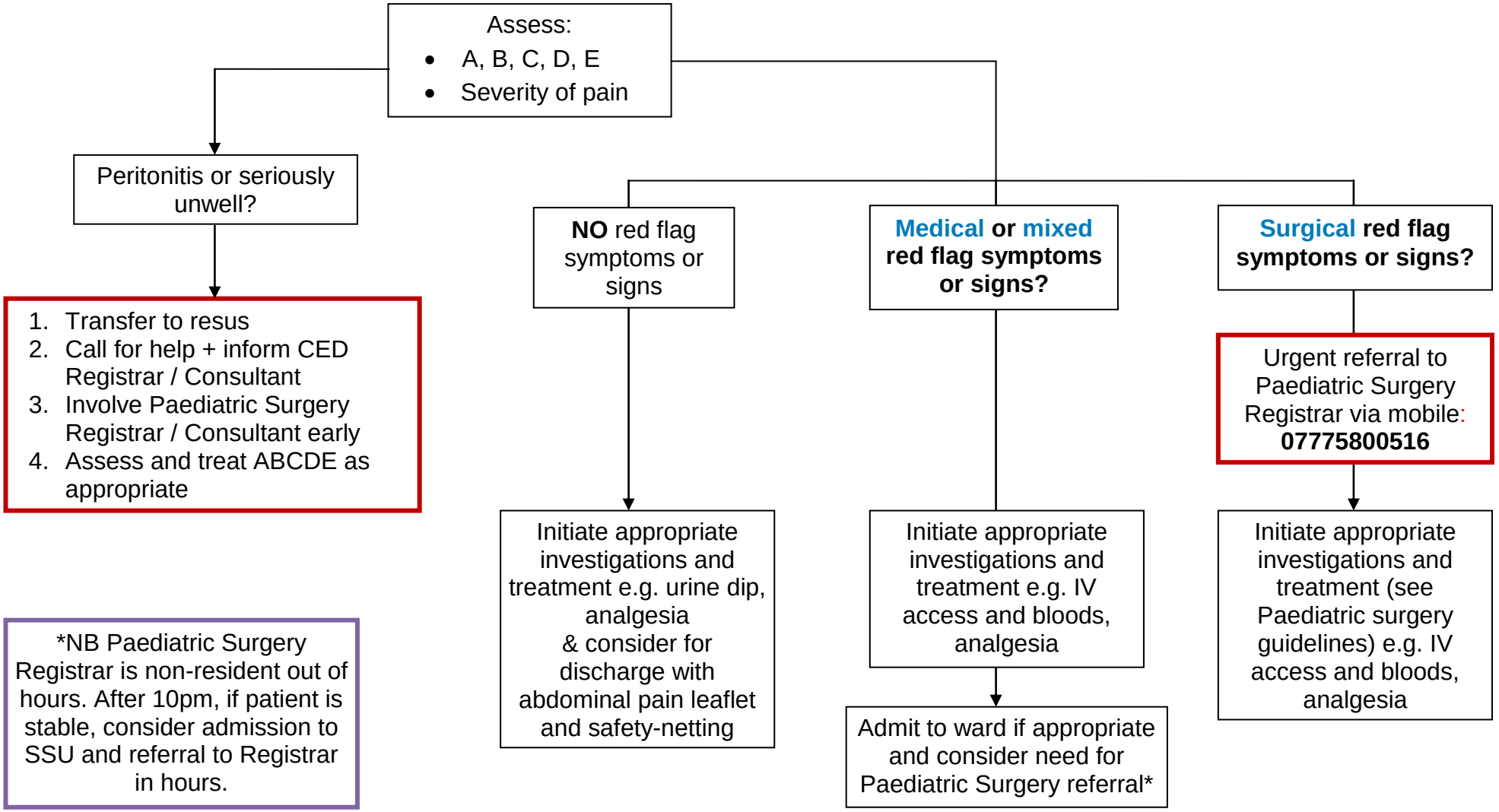
Medical red flags:

Medical or Surgical red flags:

Referral pathways for specific conditions

AGE	PROBLEM	MANAGEMENT
Infancy		
Relatively common	Incarcerated hernia	URGENT Surgical referral
	Intussusception	URGENT Surgical referral)
	Midgut volvulus	URGENT Surgical referral
	UTI	Medical referral
	Pneumonia	Medical referral
Less common	Appendicitis	Surgical referral
	Testicular torsion	URGENT Surgical referral
	NAI	URGENT Medical referral
Rare	Complication of Meckels	URGENT Surgical referral
	Hirschsprungs enterocolitis	URGENT Surgical referral
Childhood		
Relatively common	Appendicitis	Surgical referral
	Trauma	Surgical referral/no follow-up depending on the nature of injury
	Abdominal migraine	Medical referral (out-patient)
	Mesenteric adenitis	If confident with diagnosis - no further follow-up
	Urinary Tract Infection (UT)	Medical referral
	Respiratory Tract Infection	Medical referral
	Constipation	Medical or Surgical referral (in-patient/out-patient depending on presentation e.g. need for in-pt disimpaction)
	Infectious mononucleoisis	No further follow-up
Less common	Testicular torsion	URGENT Surgical referral
	Hepatitis	Medical referral
	HUS	URGENT Medical referral
	Henoch Schonlein Purpura	Medical referral
	Diabetic ketoacidosis	URGENT Medical referral
	Sickle cell crisis	URGENT Medical referral
Rare	Complications of Meckels	URGENT Surgical referral
	Pancreatitis	URGENT Gastroenterology referral. If unavailable, Surgical referral
	Ulcerative colitis	Medical referral
Adolescence		
Relatively common	As for childhood plus Menstruation pains	No further follow-up
Less common	As childhood plus Pregnancy	Gynaecology +/- Medical referral
	Ectopic pregnancy	URGENT Gynaecology
	PID	Gynaecology
Rare	Cholelithiasis / cholecystitis	Surgical referral
	As for childhood plus Ovarian pathology	URGENT Surgical referral +/- Gynaecology
	Sexual intercourse / contraceptives	Referral to the Sexual Health and Contraception Service @ Claude Nicol

Management pathway for child presenting with abdominal pain



Giving pain relief, including MORPHINE if necessary, does not affect the validity of later examination & does not delay decisions to treat