

# Paediatric Acute Abdominal Pain Pathway



Any medical or surgical "red flag" symptom/ sign present? (See tables too right)

NO

Consider appropriate analgesia\*  
Perform urine dipstick

YES

Likely diagnosis established?  
(check table 1 and 2 for advice)

NO

YES

Consider additional tests and discuss with paediatric SpR

Specific treatment or referral to paediatric or surgical SpR. If clinically indicated

Medical red flag or Equivocal red flag

Surgical red flag

Urgent referral to paediatric SpR\*\*

Urgent referral to surgical SpR\*\*

Looking ill and/ or

- Safeguarding concerns and/or
- Known chronic medical condition and/or
- No clear clinical picture

## MEDICAL RED FLAGS

- Septic appearance (fever, tachycardia, generally unwell)
- Respiratory symptoms (tachypnoea respiratory distress, cough)
- Generalized oedema suspect nephrotic syndrome
- Significant dehydration (Clinically or >5% weight loss)
- Purpuric rash (Suspect sepsis if febrile or HSP if afebrile)
- Jaundice
- Polyuria / polydipsia (Suspect Diabetes)

## SURGICAL RED FLAGS

- Peritoneal pain (guarding, generalised or localized rebound tenderness and/or abnormal bowel sounds)
- Feculent vomits
- History of recent significant abdominal trauma
- History of recent abdominal surgery
- Irreducible hernia
- Testicular torsion

## EQUIVOCAL RED FLAG (MEDICAL OR SURGICAL)

- Severe or increasing abdominal pain
- Non mobile or change in gait pattern due to pain
- Bilious (green) vomits
- "Red currant jelly" stool
- Abdominal distension
- Palpable abdominal mass
- Child younger than 5 years (except irreducible, testicular hernia ,torsion or recent abdominal injury)

\* Giving pain relief (including morphine if necessary) does not affect the validity of later examination and does not delay decisions to treat

\*\*If child is very sick inform appropriate (Paediatric and/or Surgical) Consultant ASAP

This guidance is written in the following text:

Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian.

Version 1 (7/1/13)

**TABLE 1 - Quick guide to most common causes of acute abdominal pain in children**

|                       | Most important features   |
|-----------------------|---|
| Gastroenteritis       | Diarrhoea, vomits, + family history   |
| Infantile colic       | Young healthy infant with episodes of inconsolable cry and drawing up of knees, flatus  |
| Appendicitis          | Fever, anorexia, nausea/vomiting, migration of pain from central to RIF (see Paediatric Appendicitis score)                             |
| Mesenteric adenitis   | Fever, peripheral lymphadenopathy (in 20%), pain more diffuse than in appendicitis, concomitant or antecedent URTI                      |
| Intussusception       | Mostly < 2 yrs, pain intermittent with increasing frequency, vomits (sometimes with bile), drawing up of knees, red currant jelly stool |
| Meckel's diverticulum | Usually painless rectal bleeding. Symptoms of intestinal obstruction or mimicking appendicitis possible                                 |
| Constipation          | + history, pain mainly left sided/ supra pubic, if acute look for organic causes (ie obstruction)                                       |
| UTI                   | Fever, dysuria, loin/ abdominal pain, urine dipstick positive for nitrites/ leucocytes  |
| Testicular torsion    | Sudden onset, swollen tender testis with negative Prehn's sign (no relief/ increase of pain after lifting testicle)                     |
| Irreducible hernia    | Painful enlargement of previously reducible hernia +/- signs of bowel obstruction   |
| HSP                   | Diffuse / colicky abdominal pain, non-blanching rash (obligatory sign), swollen ankles/ knees, haematuria/ proteinuria                  |
| HUS                   | Unwell child with bloody diarrhoea and triad of: anaemia, thrombocytopenia and renal failure  |
| Lower lobe pneumonia  | Referred abdominal pain + triad of: fever, cough and tachypnoea   |
| Diabetic ketoacidosis | Known diabetic or hx of polydipsia/ polyuria and weight loss, BM >15, metabolic acidosis (HCO3 <15) and ketosis                         |
| Sickle cell crisis    | Nearly exclusively in black children. Refer to sickle cell disease guideline for differentiation with non-crisis causes.                |
| Trauma                | Always consider NAI, surgical review necessary  |
| Psychogenic           | Older child with excluded organic causes  |

**TABLE 2 - In girls > 10 yrs consider gynaecological causes of abdominal pain**

|                   |  |
|-------------------|--|
| Menarche          | On average 2 yrs after first signs of puberty (breast development, rapid growth) in UK average at 13 yrs                             |
| Mittelschmerz     | One sided, sharp, usually < few hours, in middle of cycle (ovulation)  |
| Pregnancy         | Sexually active, positive urine pregnancy test   |
| Ectopic pregnancy | Pain usually 5-8 weeks after last period, increase by urination/ defecation, in late stage with bleeding (PV, intra abdominal)       |
| PID               | Sexually active, risk increase with: past hx of PID, IUD, multiple partners. Fever, lower abdo pain, discharge, painful intercourse. |
| Ovarian torsion   | Sudden, sharp, unilateral pain often with nausea/ vomiting. Fever if necrosis develops.  |

**Table 3 Appendicitis score for children with abdominal pain**

| Sign / symptom                          | Scoring |
|---|---------|
| Fever (temp in axilla > 38°C)           | 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 > 10.000                            | 1       |
| Neutrophils > 7.500                     | 1       |

Likelihood of appendicitis increase with total score (0-10 points). When total score is <3 then appendicitis is unlikely and if it is > 6- appendicitis likely. In borderline cases abdominal imaging (USS, CT) may be helpful after discussion with surgeon and radiologist – **Samuel et al, J of Paed Surgery 2002, 6: 877 and Goldman et al, J Pediatr, 2008, 153:278**