Acute Abdominal Pain – Quick Reference Guide

For Children and Young People

Management - Primary, Secondary & Community Care Settings

December 2016
Kent, Surrey & Sussex Version

NHS South East Clinical Networks Children and Young People

Kent Surrey Sussex Academic Health Science Network — Patient Safety Collaborative

Patient presents

Acute Presentation with Abdominal Pain/ Abdominal Injury? [See Table 1]

Specific History:
- Are they well in themselves?
- Is it constant or intermittent pain? & Duration of pain?
- Have there been multiple consultations in this episode of illness?
- History of fever? or Upper Respiratory Tract Infection (URTI)?
- Trauma? Bleeding?
- Change in bowel habits / blood in stools?
- Dysuria / urinary frequency?
- Urine output?
- Nausea / Vomiting?
- Gynaecological history? **[see Table 3]**
- Known chronic medical or surgical conditions?

Examination:
- Temp; capillary refill; HR; BP (where available); RR; Oxygen saturations
- Hydration status?
- Anaemia? Jaundice?
- Guarding? Rebound tenderness?

Investigations
Consider if appropriate to:
- Perform urine dipstick (consider formal MC+S in children <3 years)
- Perform pregnancy test

See over - Differential diagnosis chart **[Table 2]**

Consider presentation and age of child with respect to **safeguarding concerns** (eg delay in presentation; abdominal injury not consistent with history or age/developmental stage of child; bruising in non mobile infant).

Follow local safeguarding procedure

Table 1

Clinical Findings	Medical or Surgical Red Flags	Surgical Red Flags	Medical Red Flags
Think Sepsis	**Perform Assessment to identify likely source of infection, risk factors and clinical indicators of concern***		
History and General state	• Severe or increasing abdominal pain • Child unresponsive or excessively drowsy • Child non-mobile or change in gait pattern due to pain	• Recent significant abdominal trauma • Recent abdominal surgery • Testicular pain – consider torsion • Pregnant	• Polyuria/polydipsia (suspect diabetes mellitus) • RAPIDLY WORSENING flu-like symptoms with diarrhoea and / or vomiting especially in older children and young people
Gastrointestinal system	• Abdominal distension • Palpable abdominal mass • Bilious (green) or blood-stained vomit	• Peritonitis (guarding, rebound tenderness) • Appendicitis – Assess using Appendicitis Score **[See over - Table 4]** • Obstruction (colicky abdo pain, bilious vomiting, resonant bowel sounds) • Irreducible hernia	• Jaundice
Stool	• Blood in stool	• 'Red currant jelly' stool	
Circulation and hydration	• Significant dehydration (clinically or >5% weight loss) • Generalised oedema – suspect nephrotic syndrome		
Respiratory system	• Tachypnoea, respiratory distress, cough		
Skin	• Purpuric or petechial rash – consider meningococcal disease if febrile		

*http://www.kssahsn.net/what-we-do/KSSPatientSafetyCollaborative/sepsis/urgent-care-pathways/path/Sepsis-PrimaryCare.pdf

ACTION: CYP patients with red flag symptoms should be referred or admitted to secondary care as per local guidelines.

This guidance is written in collaboration with the SE Coast SCN and involved extensive consultation with healthcare professionals in Wessex

Abdominal Pain Quick Reference Guide Side 2

Most common causes of acute abdominal pain in children

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Table 2

Differential Diagnosis	Most important features
Appendicitis	Fever, anorexia, nausea/vomiting, migration of pain from central to RIF (see Appendicitis score – **Table 4**)
Constipation	Positive bowel habit history. Pain mainly left sided/ supra pubic. If acute look for organic causes (ie obstruction)
Diabetic ketoacidosis	Known diabetic or history of polydipsia/ polyuria and weight loss, BM >11, metabolic acidosis (pH< 7.3 / HCO3 <15) and blood ketones > 3 or ketone sticks more than 2+. (tests where available)
Gastroenteritis	Diarrhoea, vomiting with a positive contact history. May mimic sepsis.
Henoch-Schönlein Purpura (HSP)	Diffuse / colicky abdominal pain, non-blanching rash (obligatory sign), swollen ankles/ knees, haematuria/ proteinuria
Haemolytic-Uraemic Syndrome (HUS)	Unwell child with bloody diarrhoea and triad of: anaemia, thrombocytopenia & renal failure
Infantile reflux / cow's milk protein intolerance (CMPI)	Infant with inconsolable crying, drawing up of knees, back arching and sometimes blood in stools (CMPI) For more detail on the Infant Feeding pathways please see website or email: CWSCCG.cypSECpathways@nhs.net
Intussusception	Mostly < 2 yrs, pain intermittent with increasing frequency, vomits (sometimes with bile), drawing up of knees, red currant jelly stool (late sign)
Irreducible hernia	Painful enlargement of previously reducible hernia +/- signs of bowel obstruction
Lower lobe pneumonia	Referred abdominal pain + triad of: fever, cough and tachypnoea
Mesenteric adenitis	Fever, peripheral lymphadenopathy (in 20%), pain more diffuse that in appendicitis, concomitant or antecedent URTI
Meckel's diverticulum	Usually painless rectal bleeding. Symptoms of intestinal obstruction. Can mimic appendicitis
Psychogenic	Older child with excluded organic causes
Sepsis	Consider in unwell child with fever & abdominal pain / diarrhoea especially with history of recent skin wound or burn particularly if the child is unresponsive to fluid rehydration. **Abdominal pain & diarrhoea may be an early presentation of meningococcal disease.**
Sickle cell crisis	Most common in people of African and Caribbean descent.
Testicular torsion	Sudden onset, swollen tender testis with negative Prehn's sign (no relief/ increase of pain after lifting testicle)
Trauma	Always consider NAI. Surgical review necessary
Tumour	Unusual abdominal mass, beware may mimic constipation.
Urinary Tract Infection	Fever, dysuria, loin/ abdominal pain, urine dipstick positive for nitrites/ leucocytes. Follow local guidelines.

Table 3

Female gynaecological pathologies	
Menarche	On average 2 yrs after first signs of puberty (breast development, rapid growth). Average age in UK is 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, increased by urination/ defaecation. Late presentations associated with bleeding (PV, intra-abdominal). Shoulder tip pain.
Pelvic inflammatory disease (PID)	Sexually active. Risk increase with: past history 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 4 - Appendicitis Score

Sign / symptom	Scoring
Fever (axillary temp > 38°C)	1
Anorexia	1
Nausea or vomiting	1
Pain on cough/ percussion or hopping	2
RIF tenderness	2
Migration of pain (from central to RIF)	1
WCC > 10,000 (where available)	1
Neutrophils > 7,500 (where available)	1

Likelihood of appendicitis increases with total score (Maximum 10 points). When total score is <3 then appendicitis is unlikely and if it is > 6 appendicitis is 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

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