Abdominal Pain

Definition / Supporting Information

Whilst abdominal pain refers to pain perceived in the area of the abdomen, it is important to remember that pathology originating in the abdomen may be perceived as pain elsewhere.

Keywords / also known as: abdominal distension, gastroenteritis, urinary tract infection, UTI, constipation, abdominal tenderness

Essential History

A good detailed history is essential with a view to exclude pathologic abdominal pain.

Ask about:

- A detailed list of current medications, including herbal and alternative medicines
- Onset
  - Insidious or sudden
- Precipitating event (eg, infection, trauma)
- Location (eg, quadrant, peri-umbilical)
  - Abdominal pain may be referred (eg, the cause is outside the abdomen)
    - Lower-lobe pneumonias may cause inflammatory irritation of the diaphragm, resulting in acute abdominal pain as the presenting symptom
    - Pathology in the abdomen may also refer pain to other locations (eg, irritation of the diaphragm may refer pain to the shoulder area)
- Duration (eg, continuous, variable, specific time of day only)
- Timing of onset
- Changes in intensity, location, and quality of pain
  - Frequency of recurrence and duration of episodes
  - Relationship to / influence of eating?
  - Improved with defecation?
- Character of pain: nature, quality, severity (eg, sharp, tearing, dull, severe enough to awaken from sleep)
- Associated factors that improve or worsen the pain (eg, activities, relationship to meals, relationship to breathing)
- Radiating pattern of pain
- Associated symptoms particularly in relation to pain:
  - Cardiopulmonary review (eg, dyspnoea, tachypnoea, colour changes)

  - Gastrointestinal review (eg, number of bowel movements, frequency, consistency, colour, whether blood is present) (see Melaena / Bleeding Per Rectum)
  - Genitourinary review (eg, dysuria, haematuria, observed stones)
  - Menstrual cycle problems (eg, dysmenorrhoea, amenorrhoea) and any relationship with symptoms
  - Neuropsychiatric review
- Medical and family history
  - Trauma
  - Toxin exposures / medications (eg, NSAIDs, antibiotics, iron supplements, laxatives) (see Drug Overdose and Poisoning)
  - Dietary history
  - Environmental or behavioural factors:
    - Recent social changes (eg, family or school)
    - Possible exposure to new allergens / irritants / toxins via:
      - Travel
      - New foods
    - Exposure to:
      - Illness
      - Animals
      - Sick friends / family members
      - Locations with high prevalence of disease (eg, hospitals)
  - Previous abdominal surgery
  - Previous pattern of growth and weight gain
  - Family or personal history of:
    - Coeliac disease
    - Inflammatory bowel disease (IBD)
    - Inherited disorders
    - Endocrine disorders
    - Chronic pain disorders
  - Obtain menstrual, gynaecological, and sexual histories
  - Perinatal history
    - Was stool passed within the first 24 hours?

‘Red Flag’ Symptoms and Signs

Ask about:

- Weight loss
  - Always plot on current weight against height
- Slow linear growth (see growth chart)

- Delayed slow / discordant pubertal development
- Gastrointestinal blood loss (see Melaena / Bleeding Per Rectum)
- Significant vomiting, bloody (haematemesis) or bilious vomiting
- Chronic severe diarrhoea
- Persistent right upper or right lower quadrant pain
- Unexplained fever
- Right upper quadrant pain / tenderness
- Family history of inflammatory bowel disease

Look for:

- Signs of acute abdomen
  - Guarding / peritonism
- Abdominal distension
- Hepatomegaly
- Splenomegaly
- Tender spine
- Weight loss
- Perianal abnormalities
- Mouth ulcers

Differential Diagnosis / Conditions

- Abdominal pain has a very broad differential diagnosis which necessitates detailed and focused history.

Acute abdominal pain

- The main causes of acute abdominal pain in children and teenagers are:
  - Acute gastroenteritis
  - Mesenteric adenitis
    - Viral
    - Bacterial
  - Urinary tract infection (See Urinary tract infection in under 16s: diagnosis and management [NICE clinical guideline CG54])
  - Appendicitis
  - Trauma
  - Constipation (See Constipation in children and young people: Diagnosis and management [NICE clinical guideline CG99])
  - Acute bowel inflammation – can be a presenting feature of IBD (See Inflammatory Bowel Disease [NICE Quality Standard QS81])
  - Pneumonia

  - Sickle-cell syndromes (in the UK, it is predominantly but not exclusively seen in African / Caribbean population) (See NICE pathway Sickle cell disease: acute painful episode [NICE pathway sickle cell disease])
  - Gastritis
  - Coeliac disease (See Coeliac disease: recognition, assessment and management [NICE guideline NG20])
  - Mittelschmerz
  - Pregnancy
  - Other gynaecological issues (eg, dysmenorrhoea, tubo-ovarian abscess)
- A rare cause of abdominal pain in children and adolescents is pancreatitis
- Abdominal migraine

Functional abdominal pain (NOS)

The term 'functional abdominal pain' is commonly used in paediatric practice in the UK, and may be more appropriate to use in the clinical setting with patients as opposed to the formal term used by Rome IV.

Rome IV uses an overarching term 'functional abdominal pain – not otherwise specified (NOS)'. Despite this, it is important that a diagnosis is made positively (i.e "You have a condition called functional abdominal pain"); it is not a diagnosis of exclusion. ROME IV defines this as:

Childhood functional abdominal pain

- Diagnostic criteria* must include all of the following:
  - Episodic or continuous abdominal pain that does not occur solely during physiologic events (eg, menses, eating)
  - Insufficient criteria for irritable bowel syndrome, functional dyspepsia or abdominal migraine
  - After appropriate evaluation, the abdominal pain cannot be fully explained by another medical condition
- *Criteria fulfilled at least four times a month for at least two months prior to diagnosis

Investigations

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team):

- Refer urgently to specialist practitioners (eg, Emergency Department / Paediatric / Paediatric Surgery Team(s) if surgical abdomen is suspected
- Urinalysis should suffice as the initial laboratory study
- Full blood count
- Electrolytes and liver function tests
- C-reactive protein (CRP)

- Coeliac disease screening (anti-tissue transglutaminase antibodies, TTG)
- Amylase may be considered for acute abdominal pain
- In patients with suspected infection / diarrhoea:
  - Stool ova and parasite
  - Stool culture, faecal antigen for *Helicobacter*
  - *Helicobacter pylori* (*H.pylori*)
    - Prevalence in the UK:Variable, but should be more considered in patients presenting in high incidence areas
    - Described to be < 15% in many areas (children and adults)
    - Known high risk factors for *Helicobacter:*
      - Ethnicity
      - High prevalence area (for patients, history of overseas travel)
      - Other affected family member
    - Assessment of *Helicobacter*
      - *Helicobacter* stool antigen (98% sensitive and specific)
      - Blood (94–95% sensitive and specific)
      - Urease breath test
      - Stool test should not be performed within 2 weeks of proton pump inhibitor (PPI) use as it interferes with the test
      - Consider gastro-oesophageal reflux disease (GORD) treatment with a compound alginate preparation before *H.pylori* testing is considered, unless resident in an area with *Helicobacter* incidence > 20% (See Gastro-oesophageal reflux disease in children and young people: diagnosis and management [NICE guideline NG1]) and gastritis.
- Pregnancy test for young women

To be undertaken by specialist practitioners (eg, Emergency Department / Paediatric / Paediatric Surgery Team(s)):

- Any of the above tests if not already undertaken
- Consider chest x-ray
- A ‘focussed’ ultrasound scan may be considered (eg, to look for gallstones in right hypchondrium pain)
  - A non-specific unfocussed unltrasound scan is rarely helpful
- Calprotectin stool testing: (See Faecal calprotectin diagnostic tests for inflammatory diseases of the bowel [NICE Diagnostics Guidance DG 11])
  - Not specific for IBD - may also be positive in infections
  - False positive results may unnecessarily worry parents about potential IBD
  - Should not be routinely undertaken and currently can only be done in secondary and tertiary care

- Allergies should be considered as a possible cause, but one should be careful about over-diagnosing and over-restricting diet

Treatment Approach

Acute abdominal pain

To be undertaken by non-specialist practitioners (eg, General Practitioner (GP) Team):

- Appropriate management for acute diarrhoea
- A trial of antacid treatment can be considered in suspected gastro-oesophageal reflux disease (see Gastro-oesophageal reflux disease in children and young people: diagnosis and management [NICE guideline NG1]) and gastritis. Also refer to section about *H. pylori* above
- Laxatives for constipation (see Constipation in children and young people: diagnosis and management [NICE clinical guideline CG99])
- Antibiotics for diagnosed urinary tract infections (see Urinary tract infection in under 16s: diagnosis and management [NICE clinical guideline CG54])
- Surgical referral may be needed in suspected cases

To be undertaken by specialist practitioners (eg, Emergency Department / Paediatric / Paediatric Surgery Team(s)):

Chronic abdominal pain

- Organic causes for chronic abdominal pain (eg, IBD, coeliac disease) should be treated as diagnosed

Chronic recurrent functional abdominal pain

- Dietary interventions
  - Use only in presence of suggestive positive history
- Psychosocial therapies
  - A referral to a psychologist in relevant cases should be considered
  - The timing of referral is important
- Medical management
  - Several drugs have been used to treat recurrent abdominal pain in childhood (eg, antispasmodics, simple analgesics)
  - Consider side effects, particularly in cases of polypharmacy
  - Evidence for efficacy and tolerability is varied

When to Refer

To be undertaken by specialist practitioners (eg, Emergency Department / Paediatric / Paediatric Surgery Team(s)):

- Any ‘red flag’ signs or symptoms

- Recurrent or chronic abdominal pain
- Poor linear growth (see Faltering Growth)
- Suspected inflammatory bowel disease
- Gynaecological issues (including ectopic pregnancy, tubo-ovarian abscess)
- History of psychiatric disorder
- Abnormal blood test results (discuss with a paediatrician and refer as appropriate)

When to admit

- Surgical or medical emergency as determined by diagnostic or therapeutic intervention
- Inability to tolerate enteral diet
- Inability to maintain hydration status
- Diagnosis that requires observation to monitor clinical status

'Safety Netting' Advice

- If the patient is not responding to treatment, a review of the patient and original diagnosis made is necessary. The GP may consider referral to a paediatrician.

Patient / Carer Information

Please note: whilst these resources have been developed to a high standard they may not be specific to children

- Functional Abdominal Pain (Web page, GI kids)
- Stomach ache and abdominal pain (Web page), the NHS website

Resources

National Clinical Guidance

Child Maltreatment: when to suspect maltreatment in under 18s (Web page), NICE clinical guideline CG89, National Institute for Health and Care Excellence

Coeliac disease: recognition, assessment and management (Web page), NICE clinical guideline NG20, National Institute for Health and Care Excellence

Constipation in children and young people: diagnosis and management (Web page), NICE clinical guideline CG99, National Institute for Health and Care Excellence

Diarrhoea and vomiting caused by gastroenteritis in under 5s: diagnosis and management (Web page), NICE clinical guideline CG84, National Institute for Health and Care Excellence

Faecal calprotectin diagnostic tests for inflammatory diseases of the bowel (Web page), NICE Diagnostics Guidance DG 11, National Institute for Health and Care Excellence

Gastro-oesophageal reflux disease in children and young people: diagnosis and management (Web page), NICE guideline NG1, National Institute for Health and Care Excellence

Inflammatory Bowel Disease (Web page), NICE Quality Standard QS81, National Institute for Health and Care Excellence

Sickle cell disease: acute painful episode (Web page), NICE Pathway, National Institute for Health and Care Excellence

Urinary tract infection in under 16s: diagnosis and management (Web page), NICE clinical guideline CG54, National Institute for Health and Care Excellence

Medical Decision Support

Child Sexual Abuse (Web page), RCPCH Child Protection Companion

Perplexing Presentations (Including FII) (Web page), RCPCH Child Protection Companion

Suggested Resources

Please note: these resources include links to external websites. These resources may not have national accreditation and therefore PCO UK cannot guarantee the accuracy of the content.

Abdominal Pain: Quick Reference Guide (PDF), RCPCH Paediatric Care Online (PCO UK)

Constipation: Quick Reference Guide (PDF), RCPCH Paediatric Care Online (PCO UK)

Abdominal Pain (Web page – requires log-in), Spotting the Sick Child

Pain Management (eLearning - requires log-in), RCPCH Compass

Koppen IJ, Nurko S, Saps M, Di Lorenzo C, Benninga MA .The pediatric Rome IV criteria: what's new? Expert Rev Gastroenterol Hepatol. 2017 Mar;11(3):193-201 [Pubmed]

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Afzal NA, Tighe MP, Thomson MA. Constipation in children. Ital J Pediatr 2011;37:28 [PubMed]

McNulty CA, Lasseter G, Shaw I, et al. Is Helicobacter pylori antibiotic resistance surveillance needed and how can it be delivered? Alimentary Pharmacology & Therapeutics 2012;35:1221–1230 [Pubmed]

Coon ER, Quinonez RA, Moyer VA, et al Overdiagnosis: how our compulsion for diagnosis may be harming children. Pediatrics 2014;134(5):1013–1023 [Pubmed]

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