Assessment and management

Initial approach to the child with acute abdominal pain

The assessment of the child with possible abdominal pain can follow the pattern of:

1. Primary survey and stabilisation
   - **A**irway
   - **B**reathing
   - **C**irculation
   - **D**isability (neurological)
   - **E**xposure
   - (**DEFG** = **D**on't **E**ver **F**orget **G**lucose).
2. Consider pain relief.[1,2]
3. A targeted history (See the flowchart on page 5).
4. Detailed examination.
5. Appropriate investigations.
6. Treatment/disposition/follow-up.

The answers to the questions in the following flowchart should be found during the assessment.

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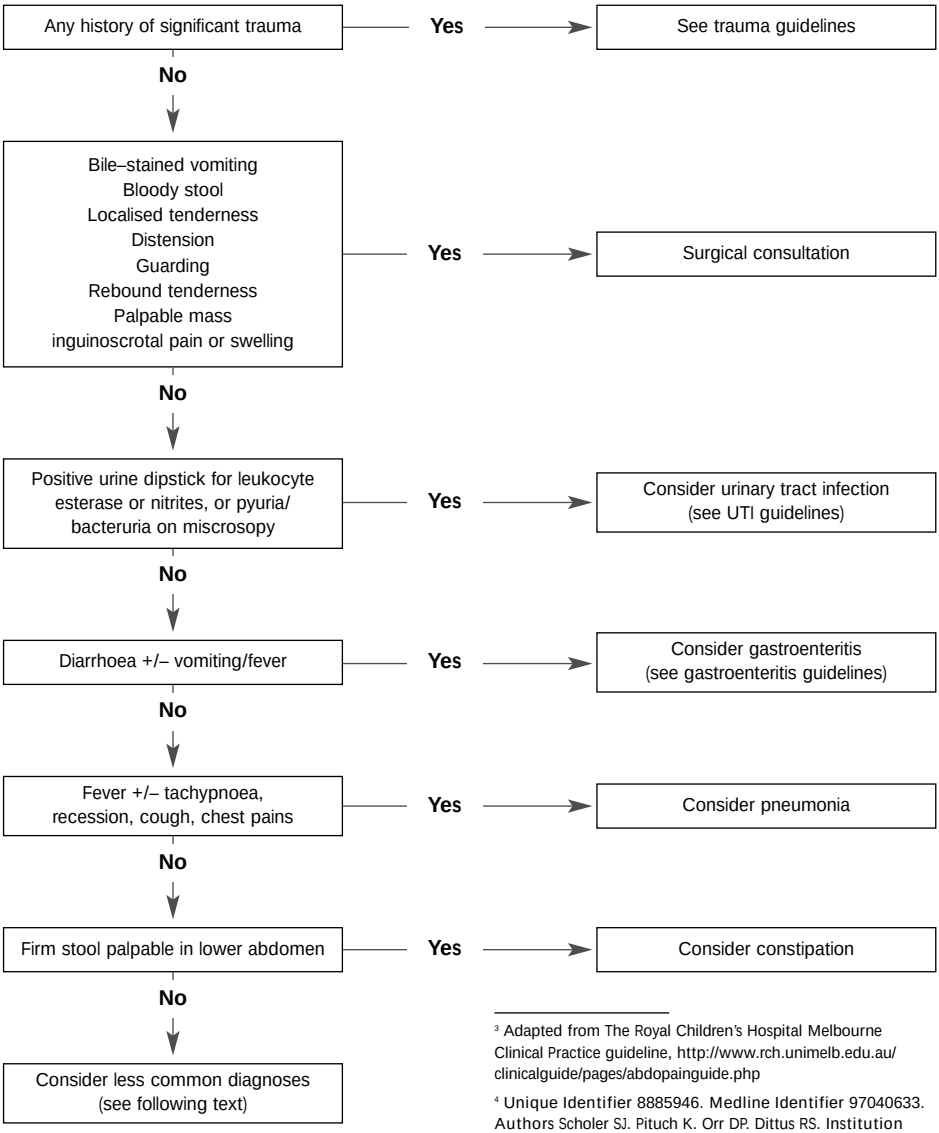
[1] Unique Identifier 12520567. Medline Identifier 22407320. Authors Thomas SH. Silen W. Institution Department of Surgery, Harvard medical School, Massachusetts General Hospital, Boston, Massachusetts 02114–2696, USA. Thomas.Stephen@mgh.harvard.edu. Title Effect on diagnostic efficiency of analgesia for undifferentiated abdominal pain. [Review] [23 refs]. Source British Journal of Surgery. 90(1): 5–9, 2003 Jan.

[2] Unique Identifier 1393034. Medline Identifier 93006372. Authors Attard AR; Corlett MJ; Kidner NJ; Leslie AP; Fraser IA. Institution Department of General Surgery, Walsgrave Hospital, Coventry. Title Safety of early pain relief for acute abdominal pain.[comment]. Comments Comment in: BMJ. 1992 Oct 24; 305(6860):1020–1; PMID: 1296649. Source BMJ. 305(6853): 554–6, 1992 Sep 5.

Abdominal pain[3,4]



[3] Adapted from The Royal Children's Hospital Melbourne Clinical Practice guideline, http://www.rch.unimelb.edu.au/clinicalguide/pages/abdopainguide.php

[4] Unique Identifier 8885946. Medline Identifier 97040633. Authors Scholer SJ. Pituch K. Orr DP. Dittus RS. Institution Department of Pediatrics, Indiana University School of Medicine, Indianapolis, USA. Title Clinical outcomes of children with acute abdominal pain. Source Pediatrics. 98(4 Pt 1): 680–5, 1996 Oct.

Background on questions asked in the flowchart

Is there evidence of trauma?

- If there is a known history of trauma then local trauma guidelines should be followed.
- If the child is a victim of non-accidental injury then the history may be misleading. One must consider this diagnosis and look for telltale bruising and/or fractures and/or burns.

Is the child in shock or severely dehydrated?

A shocked infant/small child will usually have pallor, lethargy, tachycardia and peripheral shut down (ie capillary refill > two seconds, cold mottled peripheries). Hypotension is a late and preterminal sign of shock in children. Do not wait for this before commencing fluid therapy.

Is there bile-stained vomiting?

This means a definite green colour in the vomit. Sometimes gastric contents can have a yellow tinge. This is not bile staining.

- Bile-stained vomiting means mechanical bowel obstruction until proven otherwise.
- It may be due to volvulus and bowel ischaemia and therefore requires immediate assessment.

Does the child have any other indicators of intestinal obstruction?

Signs and symptoms of obstruction in children are very similar to those of adults:

- vomiting
- colicky abdominal pain
- absence of normal stooling/flatus
- abdominal distension
- increased bowel sounds.

Through the thin-walled abdomens of infants and small children, one may be able to see

- visible distended loops of bowel
- visible peristalsis.

When thinking about a cause for the obstruction:

- look for scars
- swellings at the site of hernial orifices and of the external genitalia.

NB: In a child with acute abdominal pain and vomiting, gastroenteritis should be a diagnosis of exclusion.

Does the child have peritonitis?

Signs consistent with peritonitis include:

- refusal/inability to walk
- slow walk/stooped forward
- pain on coughing or jolting
- lying motionless
- decreased/absent abdominal wall movements with respiration
- abdominal distention
- abdominal tenderness – localised/generalised
- abdominal guarding/rigidity
- percussion tenderness
- palpable abdominal mass (see question below)
- bowel sounds – absent/decreased (peritonitis)
- associated non-specific signs – tachycardia, fever.

Symptoms and signs of acute abdominal pathology may be masked by an altered level of consciousness/the presence of shock. Repeat examination after resuscitation or an appropriate interval.

Does the child have other abdominal tenderness?

This is tenderness not associated with peritonitis. Is the tenderness located in the abdominal wall or the abdominal cavity? Is it localised or generalised?

Is there an abdominal mass?

Signs of an abdominal mass should focus on: site, mobility, tenderness, potential relationship to the intestine, mesentery, liver, spleen, pancreas, kidneys or pelvic organs. Examples of conditions with abdominal masses include intussusception (sausage shaped) or neoplasm (eg neuroblastoma).

Does the bowel action contain blood?

- Blood mixed with stools may indicate infective diarrhoea. The presence of blood makes it more likely to be bacterial. Ask about travel history and recent antibiotic therapy (pseudomembranous colitis).
- Blood mixed with mucus (redcurrant jelly) suggests intussusception.
- Altered blood (meleana) suggests upper gastrointestinal bleeding.

Other conditions where there can be abdominal pain associated with blood in the stools include:

- Inflammatory bowel disease
- midgut volvulus (shocked child)
- henoch schonlein purpura
- haemolytic uremic syndrome.

Does the child have a known congenital or pre-existing condition that may be related to the abdominal symptoms and signs?

For example:

- previous abdominal surgery (adhesions)
- nephrotic syndrome (primary peritonitis)
- mediterranean background (familial mediterranean fever)
- hereditary spherocytosis (cholethiasis)
- cystic fibrosis (meconium ileus equivalent)
- cystinuria
- porphyria.

Is there jaundice?

Hepatitis may present with pain due to liver swelling. Rarely children may have a painful obstructive jaundice (eg choledochal cyst).

If the patient is a male, could he have torsion of the testis?

This pain can often be referred to the abdomen. This is a surgical emergency and if suspected, the appropriate surgeon should be consulted immediately.

Is the patient a post-menarchal female?

Has the adolescent started her periods? If so when was the last normal menstrual period?

Is she sexually active? (Ask the patient on her own).

Suggest a pregnancy test. (Ectopic pregnancy is a life threatening disorder).

A post-menarchal adolescent girl is pregnant until proven otherwise.