

Abdominal Distension

Essential History

Ask about:

- Medical and surgical history
 - A comprehensive history and review of systems is warranted
- Mother's pregnancy history (for abdominal distension in newborn)
 - Oligohydramnios suggests distal urinary obstruction
 - Polyhydramnios is seen with upper gastrointestinal (GI) obstruction
- Duration and pattern of the abdominal distension
 - Intermittent distension suggests:
 - Constipation
 - Intermittent GI obstruction
 - Progressive distension suggests:
 - Intra-abdominal tumour
 - Progressive hepatomegaly and splenomegaly
 - Ascites
- Medication use, including:
 - Herbal and alternative therapies
 - Especially agents that can cause GI ileus and constipation (eg, vincristine sulfate, loperamide hydrochloride, calcium-channel antagonists)
- Family history, including:
 - Cystic fibrosis (meconium ileus)
 - Polycystic kidney disease
 - Metabolic diseases
 - History of foetal death or early neonatal deaths that might indicate unrecognised metabolic disease, associated with hepatomegaly, splenomegaly, and congenital ascites
- Inherited syndromes that predispose a child to an intra-abdominal malignancy
- History of sexual activity in female adolescents
- History of onset of puberty and menarche in female adolescents

'Red Flag' Symptoms and Signs

Any child with sepsis or other serious illness may present with abdominal distension either as a cause or a consequence of the underlying disease

Ask about:

- Symptoms of possible GI obstruction:
 - Vomiting, especially bilious
 - Pain (severe, colicky)
 - Constipation
 - Delayed passage of meconium at birth
- Symptoms that may suggest malignancy (but their absence does not exclude it):
 - Fever
 - Weight loss
 - Faltering Growth
 - Anorexia (see Loss of Appetite)
 - Fatigue
 - Irritability
 - Bone pain
- Symptoms of malabsorption
 - Diarrhoea
 - Greasy, bulky, malodorous stools
- Possible kidney problems:
 - Possible presentations in older infants and children:
 - Recurrent fever from urinary tract infection (often misdiagnosed as viral illness or otitis media)
 - Gross haematuria after minor trauma
 - Voiding difficulty in boys with posterior urethral valves

Look for:

- Prominent superficial veins on the surface of the abdomen
 - May indicate portal hypertension or obstruction to the systemic venous return.
- Signs of ascites
 - In infants, bilateral bulging flanks in the supine position
 - In older children, shifting dullness and a fluid wave may be apparent
 - Acquired umbilical hernia may indicate massive ascites
- An incarcerated hernia
- An imperforate anus
- Abdominal mass
 - May be intra-abdominal, especially if mobile

- If smooth or nodular, and / or crossing the midline, consider neuroblastoma
- Faecal masses
- Renal mass
 - Flank mass in newborn
 - May be possible to 'ballotte' kidneys
- Absence of sounds (paralytic ileus)
- Tinkling bowel sounds (incomplete obstruction)
- Imperforate hymen with hydrometrocolpos, haematocolpos in girls

Differential Diagnosis / Conditions

Newborn and infants

- Air swallowing
 - Common in healthy newborns
- Paralytic intestinal ileus
 - Quiet, non-tender abdominal distension
 - Sepsis
 - Birth asphyxia
 - Necrotising enterocolitis (preterm infants)
 - Hypothyroidism
 - Electrolyte imbalance
 - Pneumonia
- Upper GI obstruction (the higher the GI obstruction, the less the distension)
 - Atresias
 - Annular pancreas
 - Malrotation secondary to volvulus
- Lower GI obstruction
 - Incarcerated inguinal hernia
 - Anorectal malformations
 - Meconium ileus
 - Hirschsprung's disease
 - Atresias
 - Meckel's band, duplication cyst, persistent vitello-intestinal duct

- Conditions associated with a palpable mass:
 - Renal or urinary tract masses
 - Account for two-thirds of neonatal abdominal masses.
 - Multicystic kidney
 - Hydronephrosis
 - Polycystic kidney disease
 - Renal vein thrombosis
 - Mesoblasticnephroma
 - Neuroblastoma
 - Hydrometrocolpos
 - Cysts (eg, choledochal cyst)
- Conditions associated with ascites:
 - Perforation in an obstructed urinary tract (eg, posterior urethral valves)
 - Congestive heart failure
 - Liver disease
 - Congenital infection
 - Galactosaemia
 - Chylous ascites from malformation or perforation of intestinal lymphatics
 - Idiopathic

Children and young people:

- Constipation
- GI obstruction
 - Intraluminal
 - Pyloric stenosis (upper abdominal distension)
 - Intussusception
 - Meconium ileus equivalent
 - Parasites (ascariasis)
 - Intrinsic tumours
 - Extraluminal
 - Postoperative adhesions
 - Appendiceal abscess
 - Meckel's diverticulum
 - Abdominal or pelvic mass causing compression
 - Incarcerated / obstructed hernia
 - Paralytic ileus secondary to:
 - Abdominal surgery
 - Peritonitis (perforation, chemical, bacterial)
 - Trauma
 - Sepsis and shock

- Hypokalaemia
- Medication and / or anesthesia reaction
- Fat malabsorption syndrome
- Cystic fibrosis
- Coeliac disease
- Generalised hypotonia from neuromuscular disease
- Rickets
- Hypothyroidism
- Conditions associated with a palpable mass:
 - Faecal masses from constipation
 - Late presentations of congenital masses
 - Choledochal cysts
 - Haematocolpos
 - Malignancy
 - Wilms' tumour
 - Neuroblastoma
 - Hepatoblastoma
 - Ovarian tumours
 - Lymphoma (non-Hodgkin)
 - Conditions associated with ascites:
 - Nephrotic syndrome
 - Liver disease

Investigations

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

- Radiographic imaging
 - Although history and physical examination may allow diagnosis, many children require radiographic imaging
 - Choice of initial imaging technique is dictated by clinical suspicion and locally available resources and expertise
 - Consulting with radiologist is helpful
 - Abdominal ultrasound is a very useful initial investigation, especially in the presence of a mass
 - Plain-film radiographs can confirm faecal mass although not recommended as routine in constipation (see Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care [[NICE clinical guideline 99, section 1.3](#)])
 - Re-examination is indicated after laxative therapy to confirm that the masses are no longer present (within 7-10 days)

- Definitive radiographic evidence of necrotising enterocolitis includes:
 - Pneumatosis intestinalis
 - Gas visible in the portal venous system of the liver
- Further imaging with a computerised tomography (CT) scan, or a magnetic resonance imaging (MRI) scan may be undertaken depending on findings

Treatment Approach

- Treat the underlying cause
- Sick children should be managed in accordance with local guidelines with early referral for specialist review by an appropriate surgeon.

When to Refer

Refer urgently to specialist practitioners (eg, Emergency Department / General Paediatric / Paediatric Surgery Team(s)) if:

- Refractory vomiting or dehydration
- Suspected peritonitis
- Toxic or septic appearance
- Moderate or severe pain that is undiagnosed or not well controlled
- An abdominal mass of any sort
 - See Suspected cancer: recognition and referral [[NICE clinical guideline NG12, section 1.12](#)]
- Possible urgent need for surgical or radiological procedures

‘Safety Netting’ Advice

- Advise parents / carers to seek urgent medical advice if any ‘red flag’ signs or symptoms develop

Patient / Carer Information

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

- [Constipation in children](#) (Web page), Patient

Resources

National Clinical Guidance

[Constipation in children and young people: Diagnosis and management of idiopathic childhood constipation in primary and secondary care](#)(Web page), NICE clinical guideline CG99, National Institute for Health and Care Excellence.

[Suspected cancer: recognition and referral](#) (Web page), NICE clinical guideline NG12, National Institute for Health and Care Excellence.

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.***

[Resources for paediatric surgery](#) (Web page), British Association of Paediatric Surgeons.

[Abdominal Pain](#) (Web page - requires log-in), Spotting the Sick Child

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