

Gastrointestinal Diseases

Learning Objectives

- Cardinal feature of Oropharyngeal candidiasis and herpetic gingivostomatitis and how to treat them
- Clinical manifestation of H.Pylori infection, diagnosis and treatment
- Functional abdominal pain
 - A.How to differentiate between functional and pathological cause of abdominal pain
 - B.Red flag symptoms and sign suggestive of organic cause of abdominal pain
- Functional constipation : differentiate it from pathological constipation and essential steps in the management .

OROPHARYNGEAL CANDIDIASIS (OPC) = thrush, moniliasis

Oropharyngeal infection with *Candida albicans* is common in neonates

CAUSES:

- Contact with the organism in the birth canal or breast.
- Colonized breasts , hands, and/or improperly cleaned bottle nipples.
- Kissing has also been implicated
- Patients on broad spectrum antibiotics, steroids (systemic or inhaled) or immune-suppressed patient .

Clinical feature :

The lesion appears as a white plaques covering all or part of the oropharyngeal mucosa. These plaques when removed, the underlying surface characteristically looks inflamed with pinpoint hemorrhages.

Diagnosis

- Direct microscopic examination on potassium hydroxide smears preparation showed Pseudohyphae .
- Culture of scrapings from lesions.

Treatment:

- Usually self-limited in the healthy newborn infant.
- Treatment with nystatin will hasten recovery and reduce the risk of the infection spreading to other infants.
- Persistent infections should be treated with fluconazole therapy.
- If immune dysfunction is suspected, further evaluation is required .

Complications:

- Broncho-pulmonary candidiasis has been reported.
- Systemic dissemination may occur in immunosuppressed patients.
- Candidal esophagitis in immunocompromised patients.

HERPETIC GINGIVOSTOMATITIS (HGS)

This is a manifestation of primary HSV-1 infection. It is an extremely painful condition, most often affects children 6 mo to 5 yr of age. Humans are the only natural reservoirs, and no vectors are involved in transmission. The disease transmitted by close personal contact via inoculation of virus into susceptible mucus membrane of oropharynx (Infected saliva from an adult or another child is the mode of infection). The Incubation period is one week.

Symptoms:

- Fever, drooling, Sore throat and loss of appetite, Bad odor breath, Gums is swollen red or bleeding.
- Gingiva become erythematous and clusters of small vesicles erupting throughout the mouth, with cervical lymphadenopathy. Peri-oral skin involvement also seen, then the vesicle erupted leads to painful ulcers. The symptoms usually regress within 2 wk without scarring. Viral shedding may continue for 3 weeks or more.

Treatment:

- Child rest.
- Fluids should be encouraged because the child may become dehydrated.
- Analgesics and anesthetic rinses may make the child more comfortable.
- Oral acyclovir is beneficial in shortening the duration of symptoms.
- Caution, to prevent autoinoculation or transmission of infection to the eyes.

Helicobacter pylori infection:

H. pylori is a gram-negative, S-shaped rod. This organism may colonize the antrum of the stomach, leading to increased acid production or the body of the stomach where inflammation may lead to the development of an atrophic gastritis. *H. pylori* lies deep within the mucus layer which covers the gastric mucosa. It produces urease, catalase, and oxidase. Through the action of the enzyme urease, which produces ammonia and the release of cytotoxins, the underlying mucosa becomes damaged and inflamed.

H. pylori may play a role in the pathogenesis of peptic ulcer disease.

Risk factors: low socioeconomic status or affected family members.

All children infected with *H. pylori* develop histological picture of chronic active gastritis but the majority of children are asymptomatic.

Chronic colonization with *H. pylori* can predispose children to a significantly increased risk of developing a duodenal ulcer or gastric cancer such as adenocarcinoma or MALT (mucosa-associated lymphoid tissue) lymphomas

- Primary peptic ulcer disease : which are chronic and more often duodenal, age>5years , most often associated with Helicobacter pylori infection.

Clinical presentation of peptic ulcer disease : (according to the age)

- >6y of age similar to those in adult, include: epigastric pain and nausea. Pain is often described as dull or aching rather than sharp or burning as in adults. It can last from minutes to hours , Nocturnal pain is common . pain is alleviated by food or antacid . Other symptoms is acute or chronic GI hemorrhage
- Many pediatric patients present with poorly localized abdominal pain.
- Infants and younger children usually present with feeding difficulty, vomiting, crying episodes, slow growth and GI hemorrhage.

The diagnosis of H. pylori infection made by:

1. For children suspected of having H. pylori infection, an initial upper endoscopy is recommended .Endoscopic findings varies from being grossly normal to the presence of nonspecific gastritis with prominent rugal folds, Nodularity or ulcers.
Histological by demonstrating the organism in the biopsy specimens. Biopsy specimens must be obtained from the esophagus, stomach, and duodenum for histological assessment as well as to screen for the presence of H. pylori infection
2. Serologic assays using validated immunoglobulin G (IgG) antibody detection may be helpful for screening children for the presence of H. pylori, they do not help predict active infection or assess the success of antimicrobial eradication therapy.
3. urea breath tests
4. stool antigen tests

Treatment of H. pylori-associated ulcers:

- Omeperazole-clarithromycin- amoxicillin or
 - Omeperazole- metronidazole - amoxicillin or
 - Omeperazole -clarithromycin -metronidazole
- } Duration of antibiotic therapy is 2 wk and proton pump inhibitor for 1 month

RECURRENT ABDOMINAL PAIN (RAP)

Defined as episodes of pain occurring at least monthly (at least 3 episodes of pain) for 3 consecutive months with a severity that interrupts routine functioning or activity with no known organic cause , the growth and development are normal (RAP) in children affects =15% and is more common among girls than boys, often there is a family history of RAP among first-degree relatives .

Etiology and pathogenesis

- The etiology and pathogenesis of functional abdominal pain are unknown
- Altered intestinal motility in combination with increased sensitivity to pain in certain children may cause abdominal pain.
- Psychological disturbances including over-reaction to normal life events and family dysfunction have been considered important in the pathogenesis

Clinical presentation:

- Onset later than 6 yr of age and midline paroxysmal pain most often periumbilical, the child is healthy in between these episodes and physical examination is normal.
- The pain interrupts normal activity, but usually no relationship with meals.
- GIT symptoms are positively related to both anxiety and depression.
- Parents and siblings are more likely to have complaints of abdominal pain, nervous breakdown, and migraine headaches.
- Children with functional abdominal pain are more likely to experience stressors. Sexual abuse may be associated with RAP.

Diagnosis:

Wide range of potential organic causes of RAP must be considered before establishing a diagnosis of functional pain. Among the more common causes are chronic constipation, Giardia, gastroesophageal reflux, inflammatory bowel disease, Abdominal migraine , lactase deficiency , irritable bowel syndrome , UTI , surgical conditions and Peptic ulcer

The characteristic presentation of children with RAP includes:

Symptoms suggestive of organic etiology (red flags on history and examination):

- Age <6y , fever , loss of appetite , wt.loss or poor growth , joint symptoms
- Pain away from umbilicus , and pain awakening the patient from sleep.
- Vomiting , diarrhoea and blood in stool , rash , Pallor
- Abdominal tenderness, organomegally , occult blood in stool.

Evaluation:

Laboratory studies may be unnecessary if the history and physical examination clearly lead to a diagnosis of functional abdominal pain

- Screening studies: CBC, ESR, stool test for(ova,cyst, parasites) , and urinalysis, stool calprotectin help the clinician to look further for organic etiology.
- Abdominal ultrasound may be done if urinary symptoms is suspected .
- A plain abdominal film will reveal calcification and gross constipation-
- H. pylori test is indicated If symptoms suggestive of peptic ulcer .
- Upper GIT endoscopy is indicated if persistent upper GIT pathology is suspected.

Management

- After a thorough history and physical examination, the most important component of the treatment is reassurance of the child and family members.
- It is important that the child should return to regular activities.
- Successful management depends on close follow-up because it is possible that an organic problem may not have been apparent on the initial visit
- Identify red flags
- Medications are generally unhelpful, or at best, offer transient placebo effect. Gastric acid blockers or anticholinergics can be tried empirically

Prognosis:

Children with functional abdominal pain are likely to become adults with functional disorders, although the nature of the symptoms may change.

Children who develop symptoms at an early age and in whom treatment is delayed, the prognosis may be worse.

FUNCTIONAL CONSTIPATION (FC) / idiopathic constipation

Delay or difficulty in defecation that has been present for 2 wk or longer.

Constipation typically starts after the neonatal period. The constipation usually develops after the passage of painful bowel movements with voluntary withholding of feces to avoid the painful stimulus.

The child is usually otherwise well although abdominal pain and occasionally nausea and vomiting may be present .

A child with FC may have leakage of fecal liquid around the hard compacted stools in the dilated rectum causing **soiling**. Around 10% of children seek medical attention because of constipation

Several initiating factors may have been involved:

- A loss of appetite during an acute illness,
- The prescription of constipating medications following diarrhea,
- Pain from an anal fissure,
- A stressful life event
- Difficult toilet training made worse by inadequate facilities at school
- Aggressive management by parents determined to see their child toilet trained at a very early age.

Warning sign (might indicate pathological reason of constipation) :

- ✦ failure to thrive, weight loss, abdominal pain, or distension
- ✦ Vomiting, or persistent anal fissure or fistula.
- ✦ Empty rectum, no soiling
- ✦ Present from neonatal period

The most important part of the physical examination is the rectal examination regardless of age, to exclude underlying anatomic abnormalities that might account for the constipation, such as an imperforate anus, perineal fistula, intestinal obstruction (mass effect), or Hirschsprung disease.

Among children with functional constipation, the rectum is generally enlarged, and stool is present just beyond the anal verge (dilated rectal vault filled with stool).

Following the digital examination, the infant may have a gush of liquid stool, because the functional obstruction has transiently been relieved.

The physical examination often demonstrates a large volume of stool palpated in the suprapubic area..

- ✓ recurrent urinary tract infection may occur in constipated children.

Diagnosis:

-Children with no evidence of abnormalities on physical examination rarely

require radiologic evaluation. A plain X-Ray may be helpful for assessing the degree of constipation and the size of the rectum

- In the baby with delayed passage of meconium and continuing constipation, hirschsprung's disease should be excluded by rectal biopsy.

- Investigation of an older children and exclusion of the organic causes of chronic constipation will depend on the clinical features and careful history and examination

- In refractory patients (intractable constipation), specialized testing should be considered to rule out conditions such as hypothyroidism, hypercalcemia, lead toxicity and celiac disease.

- Selected children may benefit from :

- MRI of the spine to identify an intraspinal lesion .
- Motility studies to identify underlying myopathy or neuropathic bowel abnormalities
- Barium enema to identify structural abnormalities.

Management: Therapy for functional constipation includes:

- Patient education: explain to the child and his parents the sequence of events leading to chronic constipation and to outline the aims of therapy. It is vital to provide a reassuring approach that the situation will improve
- Relief of impaction to Empty the rectum and distal colon by Daily or twice daily pediatric enema preparation .Once the large intestine is empty, oral laxatives should be prescribed to ensure that the child's bowels are open.
- Softening of the stool. Bowel softeners are started as maintenance medications. e.g polyethylene glycol preparations, lactulose, or mineral oil.

- A regular bowel training program, including sitting on the toilet for 5-10 min after meals and keeping track of the frequency of bowel movements. child should be able to visit the toilet in a relaxed atmosphere at regular times
 - Children with behavioral problems that are interfering with successful treatment may benefit from a referral to a mental health care provider.
 - Maintenance therapy is generally continued until a regular bowel pattern has been established and the association of pain with the passage of stool is abolished.
 - The child should be encouraged to drink plenty of fluid and to eat a good balanced diet containing fruit and vegetables
- ✓ *Overall the long term prognosis for functional chronic constipation is excellent*