

Gastrointestinal Bleeding in Children can have Many Causes

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Abstract

Acute gastrointestinal bleeding in children is a common emergency. Gastrointestinal bleeding may involve any part of the digestive tract from mouth to anus. Causes of gastrointestinal bleeding in children are multiple and can be grouped according to the involved portion of the digestive tract and age.

Keywords: Children; Gastrointestinal; Hemorrhage

Background

Acute gastrointestinal bleeding is a common emergency. The digestive hemorrhage in infant and children is a common problem accounting for 10%-20% of referrals to pediatric. The etiology comprises extra digestive disease (coagulopathies, portal hypertension) and digestive disease (infections, malformations, inflammation) [1]. The treatment depends on the quantity of the blood loss, on the necessary drugs with etiopathogenetic impact. For all patients with significant gastrointestinal bleeding is required to place an intravenous access to ensure patient stability, to initiate fluid and blood resuscitation, to establish adequate oxygen delivery and to correct coagulopathies. The digestive endoscopy has an important role in diagnostic and sometimes it is a therapeutic method [2,3].

Epidemiology

Severe gastrointestinal bleeding is rare in the general pediatric population. Upper gastrointestinal bleeding comprises 6%-20% in pediatric population [1]. The incidence of lower gastrointestinal bleeding has not been well established. Gastrointestinal bleeding in hospitalized children in USA was 23.38%. The highest incidence of gastrointestinal bleeding was manifested by blood in stool (17.6 per 10000) followed by hematemesis (11.2 per 10000). The highest mortality rates associated with gastrointestinal bleeding were observed in cases with intestinal perforation (8.7%) and esophageal perforation (8.4%) [2].

Etiology

The causes of gastrointestinal bleeding can be categorized according to age groups: neonates, children aged 1 month – 1 year, 1-2 years, and older than 2 years [3].

Neonates – Anal fissure is the most common cause of gastrointestinal bleeding in infant. The cause is a tear at the mucocutaneous line located especially in the midline. Other causes include bacterial enteritis, milk protein allergy, swallowed maternal blood, intussusception, and lymphonodular hyperplasia [4,5]. Food allergies are immunologically mediated adverse reactions to foods. Eggs, milk, peanuts, soy, fish, shellfish, tree nuts, and wheat are foods most often implicated. Erosion of the gastric, duodenal and esophageal mucosa is frequent cause for neonatal gastrointestinal bleeding. The erosions of mucosa are caused by dramatic increase in gastric acid secretion and the laxity of gastric sphincter. Maternal stress in the third trimester can induce infantile peptic ulcer. Many drugs are implicated in neonatal gastrointestinal bleeding. Drugs such as NSAID, cortisone, heparin, indomethacin, aspirin, cephalotin, and phenobarbital cause coagulation abnormalities in neonates [6]. Prematurity, mechanical ventilation, and neonatal

distress are all associated with stress gastritis. Other causes of gastrointestinal bleeding in neonates are volvulus, coagulopathies, arteriovenous malformation, necrotizing enterocolitis, Hirschprung malady, Meckel diverticulum. One of the causes of gastrointestinal bleeding in neonate is hemorrhagic disease of newborn resulting from a deficiency in vit K- dependent coagulation factors [7-9].

The causes of upper gastrointestinal bleeding in children aged 1 month to 1 year are following: peptic esophagitis, primary gastritis often associated with *Helicobacter pylori*, steroidal and nonsteroidal anti-inflammatory drugs, Zollinger Ellison syndrome, Chron disease, and secondary gastritis in association with systemic illnesses by mucosal ischemia, diffuse erosion, and hemorrhagic gastric mucosa [3,10].

We mentiona the following causes of lower gastrointestinal bleeding in children aged 1 month to 1 year: anal fissure located dorsally in the midline, gangrenous bowel in malrotation with volvulus, and hernia with strangulation [3,11].

Upper gastrointestinal bleeding in children aged 1 year to 2 years: Peptic ulcer disease is the most common cause of hematemesis. Peptic ulcer etiologies include NSAID and gastritis causes. *Helicobacter pylori* are one of the causes of peptic ulcer. Most of the peptic ulcers are secondary to other systemic diseases such as head trauma (Cushing ulcer), burns (Curling ulcer), malignancy or sepsis.

The causes of lower gastrointestinal bleeding in children aged 1 year to 2 years include juvenile polyps located throughout the colon, Meckel diverticulum, and ectopic gastric mucosa in diverticulum causing ileal ulceration [8,11].

Upper gastrointestinal disease bleeding in children older than 2 years: An important cause of gastrointestinal bleeding is esophageal varices that can result from portal hypertension. One of the most common causes of portal hypertension is portal vein thrombosis. But the most common causes of upper gastrointestinal bleeding in children older than 12 years are: esophagitis, duodenal ulcers, gastritis, Mallory Weiss syndrome [7,12].

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Lower gastrointestinal bleeding in children older than 12 years can appear in juvenile polyps, inflammatory bowel disease (IBD). The diagnosis of inflammatory bowel disease would be well established before the onset of an acute or chronic bleeding. Infections caused by *Escherichia coli*, *Shigella*, *Clostridium difficile* can also be manifested by the emission of blood in the stool. Another causes of lower gastrointestinal bleeding are vascular lesions such as haemangioma, arteriovenous malformations, and vasculitis [3,13].

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