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INTERACTIVE CASE

A patient with a stone-hard abdominal mass. What is your diagnosis?

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A 7-year-old male patient is referred from the Family Clinic to the Outpatient Clinic for evaluation and treatment of asthma.

He had symptoms of uncontrolled asthma and rhinitis.

He had a history of acute viral bronchiolitis at 3 m, requiring hospitalization. He later developed recurrent wheezing, with seizures every 2 months. He was never submitted to treatment between spells.

He had nasal and ocular pruritus, and nocturnal snoring that did not interfere with sleep.

He was subjected to surgery for umbilical hernia and abdominal wall, cryptorchidism and phimosis.

Since 2 years of age, he had had constipation with intestinal soiling. He was unable to evacuate in the toilet. He reported pain and fear of defecating, making him "trap the stool". He would wake up daily patient with fecal leak. Negative for urinary tract infection.

He was hospitalized at 3 months, 2 years and 6 years, always with wheezing, the last time with pneumonia.

He was born at term, of vaginal delivery, after gestation without intercurrences. Mother with rheumatic fever. Birth weight 3315g. Negative foot test.

Breastfed with breast milk until 6 months. His current diet is quantitatively sufficient, but of poor quality. Intense intake of sweets, flour and biscuits.

Vaccination calendar is missing only the annual dose of influenza vaccine.

Family history of allergies and rhinitis. Paternal grandmother with constipation and is a smoker.

House cleaned with chlorine. Use of softeners in washing clothes. No pets at home.

Separated parents. He lives with his mother and maternal grandmother. He has little contact with his father. The patient sleeps in bed with his mother. He changes school frequently and has poor academic performance. There is no good relationship between the maternal and paternal families.

PHYSICAL EXAM

W = 19,900g H = 118cm BMI: 14.3 (score Z between 0 and 2)

Good general condition. Dry skin and atopy stigma.

Normal HR, RR and BP

Sparse wheezing

Abdomen protruded, flaccid and depressible. Peristalses present. Palpable mass in the hypogastric region, of stony consistency. Anus without cracks.

QUESTIONS

1- Constipation is a cause of chronic abdominal pain. Which of the following suggests an increased risk of organic disease in patients with chronic abdominal pain?

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A- Persistent pain in the LSQ
B- High fever
C- Reduced erythrocyte sedimentation rate
D- Persistent pain in the RLQ
E- NA

Chronic abdominal pain is a frequent complaint in pediatrics. Among the signs that suggest an increased risk of organic disease are 1 (Zeiter KD, 2017).

- Weight loss or growth arrest
- Gastrointestinal bleeding
- Biliary or protruding vomiting
- Odynophagia and dysphagia
- Severe chronic diarrhea
- Evacuations during the night and pain waking the patient at night
- Persistent pain in the right upper and lower quadrants
  Abnormalities in the physical examination such as mass, visceromegaly, perianal abnormalities, localized pain
- Laboratory findings such as increased C-reactive protein, increased erythrocyte sedimentation rate, and occult blood in feces
- Family history of inflammatory bowel disease

2- Which of the following represents a warning sign for organic conditions in patients with chronic constipation?

A- Hair tuft over the spine
B- Absent anal or clemasteric reflex
C- Sinus in the Sacred Region
D- Visceromegaly
E- All previous answers

Most cases of constipation are functional. Some warning signs suggesting organic cause are: 2,3,4 (Nurko S 2014, Philici L, 2018, Tabbers MM, 2014)

- Beginning in the 1st month of life
- Meconium elimination after 48 hours of life
- Poor development
- Intermittent diarrhea and explosive stools. Abdominal distension
- Empty rectum
- Pilonidal sinus covered by tufts of hairs
- Pigmentary abnormalities of the lower spinal region
- Abnormal neurological examination with no clemasteric reflex and tonus, and/or diminished or absent lower limbs reflexes
- Hidden blood in stool
- Extraintestinal symptoms
- Stool flow upon rectal exam
- No retention or soiling
- No response to conventional treatment

3 - Which endocrine or metabolic condition is associated with constipation?

A- Hyperthyroidism
B- Hyperkalemia
C- Hypocalcemia
D- Hypovitaminosis D
E- Diabetes mellitus

Among the endocrine and metabolic conditions that can cause constipation are included: 5,6,7 (Andromanakos NPPetersen B, Blackmer A,)

- Hypothyroidism
- Diabetes mellitus
- Cystic fibrosis
- Gluten enteropathy
- Multiple endocrine type 2B neoplasia
- Hypokalemia
- Hypercalcemia
- Porphyria

Other organic causes of constipation are:

- Anatomical malformations
- Neuropathies
- Myopathies and intestinal nerve disorders
- Abdominal wall abnormalities
- Connective tissue diseases
- Drugs such as opioids, phenobarbital, antacids, antidepressants, sympathomimetics, antihypertensives, etc.
- Other: poisoning by lead and other heavy metals, vitamin D intoxication, botulism, and cow's milk protein intolerance

4- The current to the diagnostic classification system of functional gastrointestinal disorders for children is 8 (Koppen IJN)

A- Rome II
B- Rome III
C- Rome IV
D- Roma V
E- The Roma system has not been validated for children.

In 1990, the Rome Foundation Committee established for the first time the criteria for diagnosis and management of functional gastrointestinal diseases. Only in 1999, the children began to be classified by the system Roma (Rome II). Since 2016, the current system is the Rome IV.

Rome IV, like all its predecessors, is a system based on symptoms and some changes occurred in relation to Rome III.

Roma IV includes adults and children, and for pediatric patients it is divided according to the age group: one for neonates and children up to 3 years of age and one for older children and adolescents.

5 - One of the criteria of change of Roma IV in relation to Rome III was the temporal criterion in functional constipation. Which one is right? 8.9 and 10 (KoppenIJN, Hyams JS, Varni JW)

A- From 2month to 1month
B- From 2 months to 3 months
C- From 1 month to 2 weeks
D- From 3 months to 4 months
E- From 1 month to 2 months

The diagnostic criteria for functional constipation include at least two of the six criteria below, if they occur at least 1x per week for a minimum of 1 month and with criteria insufficient to fill the diagnosis of irritable bowel syndrome and after thorough evaluation not explained by another clinical condition

- 2 or fewer bowel movements per week
- History of retentive posture or excessive voluntary fecal retention
- History of difficult or painful bowel movements
- Presence of large fecal mass in the rectum
- History of large diameter feces
- For children already trained in the use of the toilet, 2 additional criteria:
  - At least 1 weekly episode of fecal incontinence
  - History of large-diameter stools that can clog the toilet

INITIAL IMPRESSION AND CONDUCT

The initial diagnosis was uncontrolled asthma and rhinitis and chronic constipation with an abdominal mass (fecaloma? Neoplasia?). We ordered an urgent ultrasound (Figure 1).

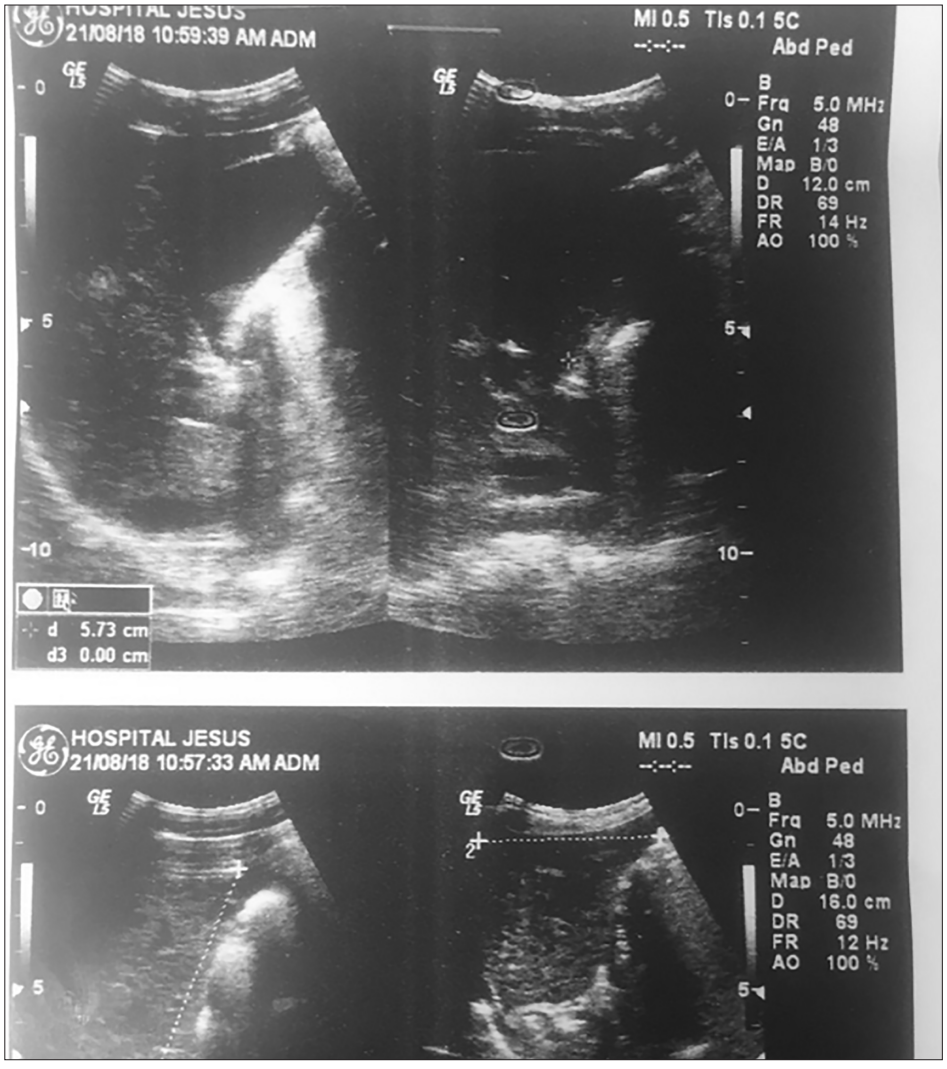


Figure 1. Abdominal ultrasound.

Liver of normal shape, volume and echogenicity, without dilation of the intra and extrahepatic bile ducts. Normally distended gallbladder, with end-walls with habitual anechoic content.

Spleen of normal volume and homogeneous echotexture. Pancreas without changes seen in this method. Normally positioned kidneys, with normal dimensions and echogenicity, and preserved corticomedullary dissociation. Right kidney measures 7.6cm and the left 7.7cm on the longitudinal axis. There is no evidence of hydronephrosis or stones. Bladder with good capacity (v = 55ml), thin walls and anechoic content. No free liquid in the peritoneal cavity.

Important sigmoid distension with a large amount of fecal material (fecaloma). AP and lateral chest X-rays and abdominal and oblique radiographs were ordered (Figures 2A, 2B, 3A and 3B, respectively).

EVOLUÇÃO

After the enema, the patient improved and was discharged. We prescribed nasal budesonide and inhaled beclomethasone, and osmotic laxative (sodium chloride + macrogol + sodium bicarbonate + potassium chloride) two sachets per day, in addition to dietary instructions. In the review visit performed 10 days after the first consultation, there was a significant improvement in her symptoms of asthma, rhinitis and constipation. We referred her to the Gastroenterology clinic for further investigation. The non-irritating osmotic laxative was replaced by polyethylene glycol 4000 (20g/day). The patient evolved with good clinical control.

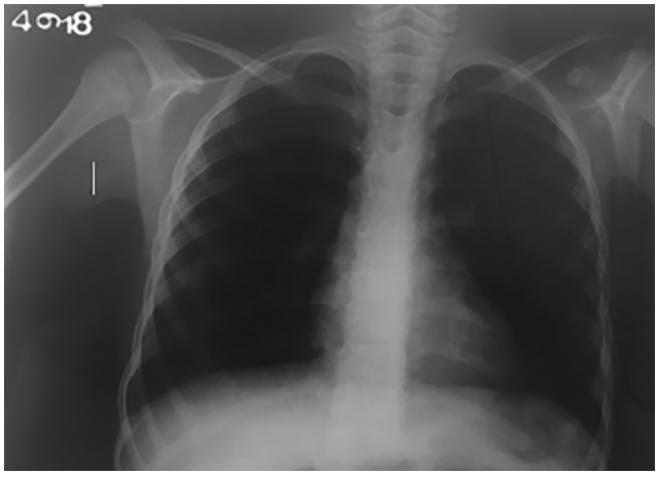


Figure 2A. Chest radiography in AP - hyperinflation.

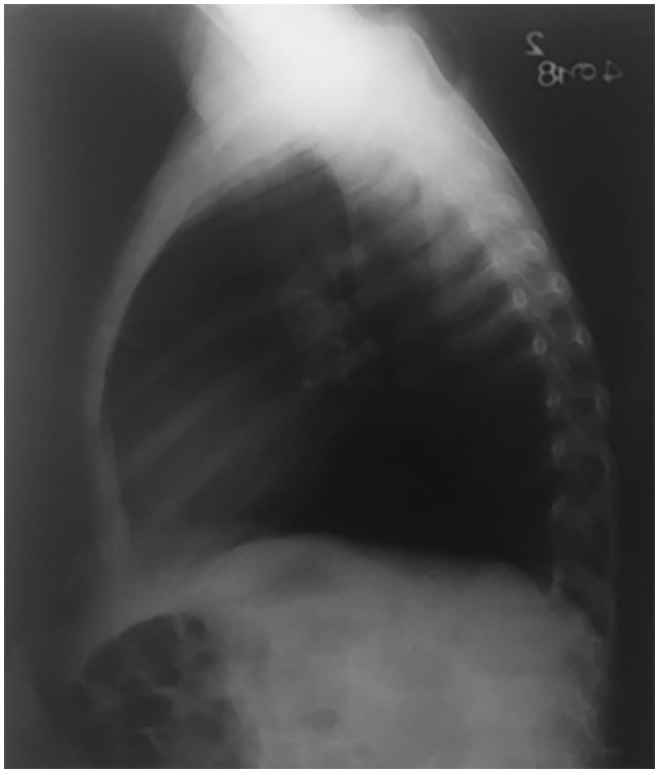


Figure 2B. Lateral chest radiography - hyperinflation.



Figure 3A. AP abdomen radiography - large amount of feces in the entire length of the colon.



Figure 3B. Voluminous amount of fecal material throughout the colon.

CONCLUSÃO

Chronic constipation is an important cause of abdominal pain in children, leading to a significant number of consultations in the Emergency Department and the Gastroenterology Outpatient Clinic. It has significant morbidity, with a major impact on the quality of life of patients and their families.

The vast majority of cases are functional, but attention should be paid to warning signs that may indicate a possible organic cause. The diagnostic criteria for functional gastrointestinal disorders in children and adults were revised in 2016 and constitute the ROMA IV criteria. The patient's gastrointestinal condition in the reported case met the criteria established by ROMA IV for functional constipation.

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