Surgical Complications of Pica Syndrome: About 3 Cases

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Abstract

The Pica syndrome is an eating disorder characterized by an excessive or abnormal desire to consume a non-nourishing substance which can be relatively harmless, or potentially harmful for the health. It is a rare affection secondary to the accumulation of diverse natured foreign bodies inside the digestive tract and more especially at the stomach level. Gastro-intestinal localization is the most frequent, and can remain asymptomatic for a long time. Treatment is surgical. We report 3 cases of digestive complications of Pica syndrome.

Keywords

- Pica syndrome
- Digestive
- Complication
- Child

Introduction

Pica Syndrome is an eating disorder mainly found in people with a severe or deep mental deficit or those already affected by autism.[1] The prevalence of this disorder can get anywhere from 9.2% to 25.8 %. This syndrome might be limited to the consumption of non-food product, or sometimes include the ingestion of food and non-food substances. The prevalence of this condition increases with the severity of the intellectual handicap.[2] The gastric bezoar is a conglomeration of hair or vegetable material within the stomach. It is important to distinguish: the gastric bezoar containing hair (trichobezoar), from the bezoar made up of vegetable material: the phytobezoar. We report 3 cases of bezoar with Pica syndrome.

Case presentation 1

14-year-old female, 3rd of 4siblings, who was under psychiatry care for mental disorders, was admitted for abdominal pain following ingestion of non digestible foreign bodies. Symptoms had begun 3 weeks before her hospital admission. She was admitted with diffuse

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abdominal pain and anorexia, no symptoms of obstruction in her GI tract and no vomiting. The child received a non-specified traditional treatment that was unsuccessful. She was referred to pediatric surgeons for better care.

Our clinical examination showed a patient with a good consciousness, normal colored conjunctives, she weight 34 kg, with a body temperature of 37.5 °C. She was stable on the hemodynamic and respiratory exam. During her abdominal examination: we saw a raising and falling of abdomen with her breathing pattern, an epigastric coving. In abdominal palpation we noticed the presence of skin folds indicating dehydrations and malnutrition. Also, we noticed a diffuse abdominal tenderness, as well as a tangible mass at the areas of the left hypochondriac. The rectal bulb was filled with stools to the rectal touch.

Plain abdominal film performed objectified the presence of a heap of nail in the stomach without visualizing a pneumoperitoneum **Figure 1**.

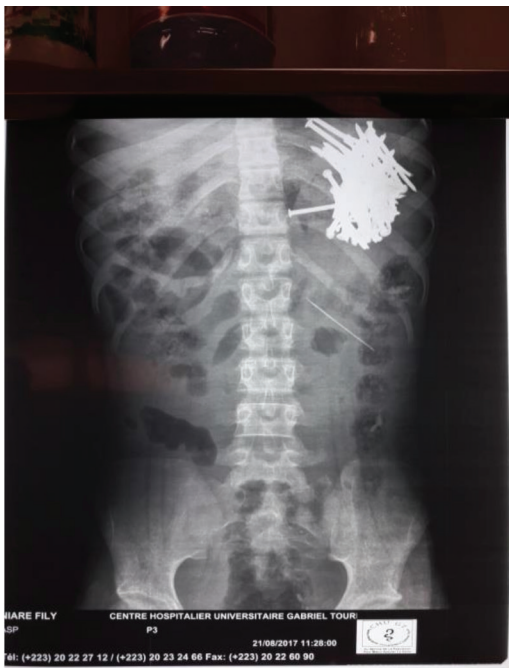

Figure 1: Plain abdominal X-Ray

An abdominal scan showed mild intra-abdominal effusion and the presence of nails in the stomach suspecting a gastric perforation.

Lab studies revealed: hemoglobin=9g/dl, white blood cells=13000, platelets=200000, the level of prothrombin=80%, Na=110mmol/L, potassium=2mmol/L and a creatinine=0.8 mg/L. The diagnosis of peritonitis due to gastric perforation was made.

The patient was resuscitated to correct the hydroelectrolytic disorders during 6 hours preceding the surgical intervention. We performed

a 4cms transverse gastrotomy with carefull and progressive extraction of nails.

Fifty three nails, a pin and bands of tape recorder cassette **Figure 2** were extracted.

Figure 2: 53 iron nails, pin and bands of tape recorder cassette extracted

The nasogastric tube was left in place. There was no complication following this surgery. The intestinal transit started again at the first post operative day. The nasogastric tube was removed at day 3 and liquid food started. She was discharged at day 7 with a request of psychiatric evaluation.

Case Presentation 2

She was a 14 years old girl, without any prior pathological history, in whom the symptoms began 3 months ago. She experienced atypical diffuse abdominal pains located at the epigastrium, accompanied by late post prandial food vomiting, no obstruction on the GI track, but weight loss and anorexia.

The clinical examination showed a child with a body in an altered general state, well colored conjunctives, her temperature at 37° and her weight at 35 kg. Her abdomen was slightly distended. A firm, mobile and painless enormous mass from left hypochondria to the epigastrium (with a diameter of approximately 20 cm) was palpated. The rectal bulb was empty on examination.

Her lab studies showed: hemoglobin=12g/dL, hematocrit= 36.5 %, platelets= 265000, white blood cells=13000, uremia= 0.5 g/L, creatinine= 6 mg /L, CRP= 10mg/L. Sodium= 125 mmol/L, potassium= 1.5 mmol/L.

Plain abdominal film showed air-fluid levels. The abdominal ultrasound showed a hyper echogenic

epigastrium mass with posterior acoustic shadow. The esophago-gastroduodenal transit showed a gastric distension and a heterogeneous incomplete image molded by the contrast agent. The diagnosis of the trichobezoar was made. The patient underwent surgery. The extraction of the trichobezoar was carried out through a wide longitudinal gastrotomy **Figure 3**.

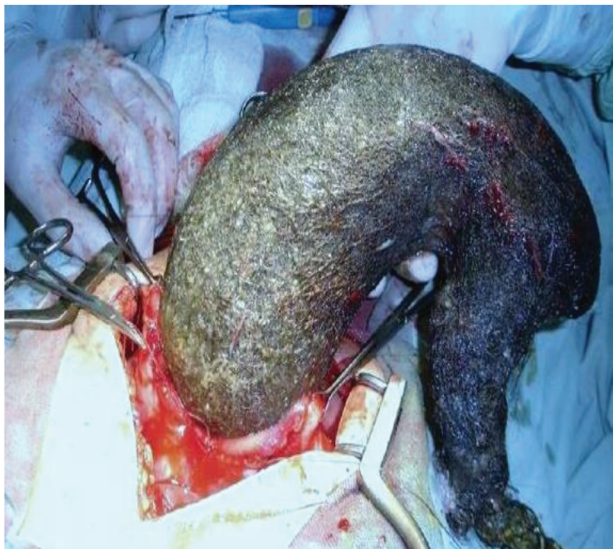

Figure 3: images in horseshoe of stomachtrichobezoar

A nasogastric tube was placed and fixed. The operating outcomes were simple. The intestinal transit started second day after the surgery. The nasogastric tube was removed at day 3 and liquid food was started. The patient was sent to a child psychiatrists for a psychiatric consult.

Case Presentation 3

A 6 year old girl, with history of behavioral disorder, admitted for diffuse abdominal pain which had started 1 month before her admission with late post prandial vomiting, constipation and anorexia.

In the clinical examination, she had well colored conjunctives. Her temperature was 37.5°, her weight was 18 kgs. Abdomen was slightly distended with a fixed and painless mass occupying the entire belly. The rectal bulb was filled with pebbles on examination. Plain abdominal film of the belly without preparation objectified granite of pebbles occupying all the lumen of the gastrointestinal tract up to the rectum and these pebbles were heaped **Figure 4**.

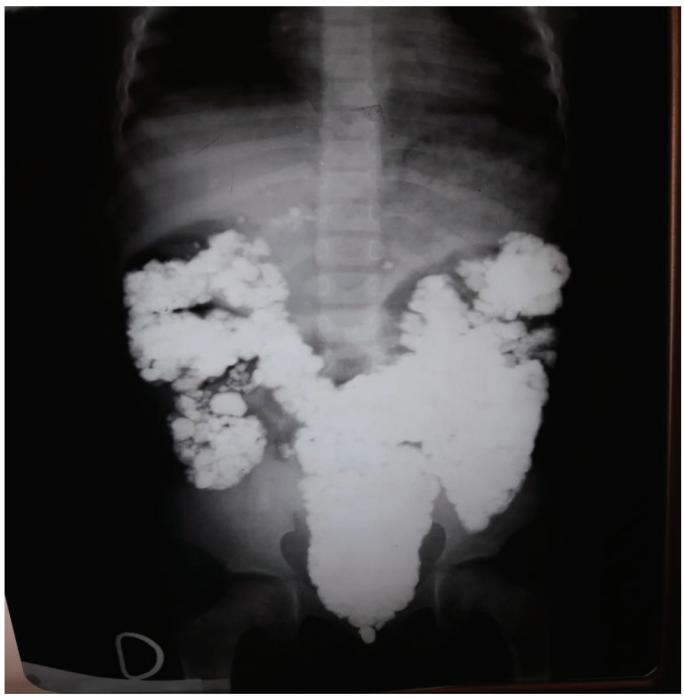

Figure 4: Plain abdominal X-Ray showing granite of pebbles occupying all the lumen of the gastronomic-intestinal tract

The diagnosis of partial obstruction due to Pica syndrome was made.Enema with normal saline solution, normacol and liquid paraffin allowed for a progressive evacuation of the entire pebbles from the digestive tract and restored the intestinal transit. The post evacuation management was simple and the patient was sent to a child psychiatrist for a psychiatric evaluation.

Discussion

The Pica syndrome is an eating disorder characterized by an excessive or abnormal desire to consume a non-nourishing substance which can be relatively harmless (ice), or potentially harmful for the health (clay, stones, pieces of metal) as it was the case of our observations.

Many theories about the etiology of Pica syndrome are known: psychological (acquired behavior), environmental (stressful events, a failed social environment), sensory (automatic strengthening) and nutritional deficit (iron and zinc). [3,4] Several predisposing or causative factors can interact in the same individual, making those etiologic hypotheses complementary. To reduce or eliminate this behavioral disorder, several programs of intervention were developed for mental handicap patients. [3]

These approaches lean on nutritional theories (iron, zinc and vitamin supplements), ecological (enrichment of the environment, increasing help), sensory (“ box of pica “), 5 and behavioral (differentiated enhancement, physical or mechanics

limitation, many others restriction, aversive methods, training in the discrimination). [4, 5, 6, 7]

The bezoar is a term derived from Persian "panzehr", or Arabic «badzehr» which means antidote. It indicates a rare condition secondary to the accumulation of diverse natured foreign bodies inside the digestive tract and more especially at the stomach level.[8] The bezoar type is determined by the nature of accumulated substances (phytobezoar: residues of plant fragments, lactobezoar: is made up of curds, observed in infant, trichobezoar: formed by a heap of hairs. Other type of bezoars was described after medicine ingestion modifying the digestive behavior: antacids, cholestyramine called pharmaco bezoar). [7, 9]

The trichobezoar is a rare condition in a child (0.15 % of the gastrointestinal foreign bodies), commonly diagnosed late in life with a peak between 10 and 19 years. This affection is more frequent in females (90% of the cases), and it affects older children in three quarters of the cases,[9] as in one of our observations. The first case of bezoar was described in 1779, and it is observed particularly in children with neuropsychiatric disorders mainly the Pica syndrome. [10]

It can remain asymptomatic for a long time which explains the many years of diagnostic delay in our case.[11] Rarely, it can pass into the small intestine through the pylorus and causes occlusion. Symptomatology is not specific and often dominated by the digestive disorders: epigastric abdominal pains, nausea and food vomiting which may contain hair. [9] Anorexia and weight loss can be a major symptom (which was noted in our case). Anamnesis has to specify beside functional signs, the presence of contributing factors: diabetes, systemic disease, idiopathic dyspepsia, possible high-fiber diet, and stomach and esophagus surgery. Eating habits disorders must be particularly investigated: trichotillomania, trichophagia, because they are often denied by the patient's relatives.[9] In clinical examination we seek an abdominal mass most of the time located at left hypochondrium and/or in the epigastrium, as was the case of our observations. Once the diagnosis of the bezoar is clinically made, it is necessary to confirm it by additional diagnostic methods. Upper gastrointestinal endoscopy is the technique of choice in small-sized forms located in the stomach. It allows at the same time for the diagnosis and the extraction of a foreign body. Other radiological examinations can be especially helpful in cases of giant trichobezoar. Abdominal ultrasound is indicated in case of palpable abdominal mass in the child. On ultrasound the bezoar is a hyper echogenic mass with a posterior cone of shadow occupying the epigastrium. The œso-gastroduodenal transit makes the diagnosis of gastric bezoar by showing an incomplete mobile intraluminal convex image, and it allows specifying the extension at the duodeno-jejunal level. [7,8] CT Scans and MRI remain expensive techniques which are not essential for the diagnosis of the bezoar. [7,8] Regarding therapy the method is chosen by the team taking into account the size of the bezoar. In case of small-sized trichobezoar use of transit laxatives can be proposed, as it was the case of one of our observations. In case of failure, the endoscopic extraction can be tried by using laser beam to split up the bezoar. [8, 12] In certain cases, the bezoar can be split up mechanically by means of a crowbar with endoscopy and then eliminated

by washing down. However, there is a risk of gastric or esophageal perforation. Dissolution can be tried using papain, acetylcysteine and cellulose. Besides an incomplete treatment, these methods expose the patient to esophageal complications or intestinal obstruction. Therefore, the treatment is often surgical, as it was the case in two of our observations. [8,13]

Conclusion

Pica syndrome is a rare condition which is more common in girls. It is mostly associated with behavioral and the eating disorder (trichotillomanie, trichophagia). Extraction can be carried out endoscopically, while surgery remains the method of choice in cases of large-sized bezoars.

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Conflict of interests

The authors declare that they have no conflict of interests.

References

1. Ali Z: Pica in people with intellectual disability: a literature review of aetiology, epidemiology and complications. J Intellect Dev Disabil 2001; 26(2):205-15.
2. Mc Alpine C, Singh NN: Pica in institutionalized mentally retarded persons. Br J Psychiatry 1986; 30(2):171-8.
3. Stiegler LN: Understanding pica behavior: a review of clinical and education professionals. Focus Autism Other Dev Disabl 2005; 20(1):27-38.
4. Kern L, Starosta K, Adelman BE: Reducing pica by teaching children to exchange inedible items for edibles. Behav Modif 2006; 30(2):135-58.
5. Hirsch N, Myles BS: The use of a pica box in reducing pica behavior in a student with autism. BehavModif 1996; 30(4):456-71.
6. Ferreri SJ, Tamm L, Wier KG: Using food aversion to decrease severe pica by a child with autism. Behav Modif 2006; 30(4):456-71.
7. Farouk A, Diffaa A, Krati K: Le bézoard gastrique: à propos de deux observations et revue de la littérature. Hegel 2013; 3(2):124-127.
8. Ousadden A, Mazaz K, Mellouki I, et al: Le trichobézoardgastrique: une observation. Ann Chir 2004 May; 129(4):237–40.

9. Hafsa AC, Golli AM, Mekki M, et al: Trichobézoard géant chez l'enfant; Place de l'échographie et du transit oesogastroduodénal. Journal de pédiatrie et de puériculture 2005;18(1):28–32.

10. Kakodkar K, Schroeder JW: Pediatric dysphagia. Pediatr Clin North Am 2013 Aug; 60(4):969–77.

11. Chouraqui J-P, Thomassin N: Douleurs abdominales récurrentes, syndrome de l'intestin irritable ou dyspepsie chez l'enfant. Archives de pédiatrie 2009;16(6):855–857.

12. Alouini R, Allani M, Arfaoui D, et al: Trichobézoard gastro-duodeno-jejunal. La presse médicale 2005;34(16):1178–1179.

13. Lun Ellis Hon K, Cheng J, Chow CM, et al: Complications of bezoar in children: What is new?. Case reports in pediatrics 2013;1-4.