

## Upper Gastrointestinal Tract Hemorrhage: Unexpected Discovery

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### Rezumat

#### *Hemoragie digestivă superioară: o descoperire neașteptată - caz clinic*

Sindromul Pica reprezintă o afecțiune serioasă caracterizată prin ingerarea obiectelor necomestibile uneori cu potențial fatal (sticlă, pietricele, etc). Prezentăm cazul unui pacient de sex masculin în vârstă de 64 de ani care se prezintă în serviciul de primire urgențe cu următoarele acuze: hemoragie digestivă superioară manifestată prin hematemeza și melena, durere epigastrică, lipsa tranzitului intestinal. În urma investigațiilor imagistice (tomografie computerizată cu substanță de contrast) se evidențiază prezența unui conținut hiperdens gastric, îngroșarea peretelui acestuia alături de limfadenopatii gastrice, lichid liber intraabdominal perihepatic, în flanc drept și în fosă iliacă dreaptă fără pneumoperitoneu sau nivele hidroaerice. Se intervine chirurgical, practicându-se o gastrotomie anterioară la care se constată prezența unei cantități mari de pietricele asociate unei tumori hemoragice, stenoizante la nivelul micii curburii. Efectuăm o gastrectomie totală cu anastomoză Eso-jejunală terminolaterală mecanică pe ansa în omega cu fistulă Braun și limfadenectomie D1. Evoluția postoperatorie este favorabilă, tranzitul baritat din ziua a 10-a postoperator evidențiind un montaj funcțional fără semne de fistulă. Pacientul se externează în ziua a 11-a postoperator. Sindromul Pica este de obicei descoperit accidental, frecvent chiar pe masă de operație motiv pentru care explorările preoperatorii sunt absolut necesare.

**Cuvinte cheie:** pica, hemoragie digestivă superioară, cancer stomac

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## Abstract

Pica is a serious condition that is characterized by ingesting inedible things which can prove to be fatal (glass, pebbles, etc.) We present the case of a 64-year-old male patient who is admitted to the emergency room with the following complaints: upper GI tract bleeding manifested through hematemesis and melena, epigastric pain, lack of bowel movements. A contrast computed tomography is performed showing the presence of a hyper-dense stomach content, gastric wall thickening, abdominal fluid but with no signs of intestinal occlusion. A laparotomy is performed and following an anterior gastrotomy a large quantity of pebbles is found along with a hemorrhagic and stenotic tumor of the lesser curvature. Taking into account the intraoperative aspect the decision was made to perform an end-to-side stapled esophago-jejunal anastomosis on an omega loop with a Braun entero-entero anastomosis following total gastric resection and D1 lymphadenectomy. Postoperative course is uneventful. A barium swallow carried out on the 10th day following surgery shows a functional anastomosis without leakage. On day 11, the patient is discharged. Pica is usually discovered by accident, most frequently on the operating table which is why thorough pre-operative examination and investigations are required.

**Key words:** pica, upper gastrointestinal tract hemorrhage, stomach cancer

## Introduction

Pica is a medical condition characterized by having an appetite and eventually eating inedible things with non-nutritive value e.g. ice (pagophagia), hair (trichophagia), glass (hyalophagia), metal (metalophagia), soil (geophagia), stone fragments or pebbles (lithophagia) or even feces (coprophagia)(1,2). It is considered a psychiatric condition by the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition (DSM-IV) but there are criteria to be considered: at least one month or more of such practice at an age where it is considered developmentally inappropriate, not part of culturally sanctioned practice and critical enough to require a medical care (3). It is not a modern time condition and has been reported from the antiquity up to the time of anthropologists, colonial physicians and explorers (4,5,6). However, in this paper our focus will be on geophagia and more precisely on lithophagia. Geophagia/lithophagia has been widely observed in pregnant women with iron-deficiency anemia, long-term institutionalized patients where this practice is associated with serious complications (7,8), morbidity (9) or even death (10). The most frequent complications are gastro-intestinal

(GI) bleeding and/or obstruction up to perforation, parasitic infestation especially in coprophagy, metal or chemical poisoning (11-14).

This report describes a patient with lithophagia who was diagnosed intraoperatively with gastric cancer and had to undergo an end-to-side, stapled esophago-jejunal anastomosis on an omega loop with Braun enteroenteroanastomosis after total gastric resection and D1 lymphadenectomy.

## Case Report

A 64-year-old male patient was admitted in the First Surgical Clinic of the Tirgu-Mures Emergency County Hospital presenting with upper GI tract bleeding (hematemesis and melena), epigastric pain, absence of bowel movements, asthenia, severe anemia with a hemoglobin of 3.9 g/dl and hematocrit of 15.7%. Local examination and interrogation revealed cachexia, weight loss, loss of appetite, loss of intestinal transit. Contrast abdomen and pelvis angio-computed tomography showed the presence of hyperdense content in the entire stomach, thickening of the anterior antral wall (< 1 cm), enlarged lymph nodes around the antrum and the greater curvature along with the presence of intraabdominal

fluid (16 mm around the liver, the right flank and in the right iliac fossa with no pneumoperitoneum nor hydroaeric levels.

Surgery is decided upon and after a proper preoperative preparation and under general anesthesia and orotracheal intubation, we perform anterior gastrotomy and gravel-like content is noticed (*Fig. 1*). Its examination revealed to be a large quantity of pebbles (*Fig. 2*). The presence of a hemorrhagic and stenosing tumor of the lesser curvature (4-5 cm in diameter) is also noticed (*Fig. 3*). Considering the intraoperative aspect, we chose to perform an end-to-side, stapled esophago-jejunal anastomosis on an omega loop with Braun entero-enteroanastomosis after total gastric resection and D1 lymphadenectomy, with the insertion of subhepatic space and Douglas pouch drainages. 10 days later, barium swallow was performed revealing the permeability of the anastomosis with no contrast substance extravasation. One day postoperative, day 11, the patient was discharged with a normal blood count and a pathology report showing an adenocarcinoma with a low degree of malignancy (moderately differentiated. The esophageal and jejunal surgical resection margins sent separately are tumor free (pT3N2).

Histologic type: adenocarcinoma.

Lauren classification: intestinal.

Histologic grading: moderately differentiated.

Tumor invasion: gastric wall subserosa.

Invasion: blood vessels: absent; lymphatic vessels: present; perineural: present.

Surgical resection margins: proximal margin: free of tumor; distal margin: free of tumor.

Therapeutic effect: no prior therapy.

Primary tumor staging: pT3.

Lymph nodes staging: pN2 (5 of 34 taken lymph nodes of the greater curvature):

- extracapsular extension: absent;
- lymph nodes with no metastasis: sinus histiocytosis.

Distance metastasis: none.



**Figure 1.** Gravel-like content



**Figure 2.** A large quantity of pebbles



**Figure 3.** Arrows pointing to the tumor

## Discussions

Pica disorder is mostly encountered in patients who happen to have some deficiency in their body. Most of the deficiencies are mineral or vitamin linked such as zinc deficiency, iron deficiency, calcium deficiency and without realizing it, these people tend to eat objects that contain these elements.

For instance, during pregnancy, women tend to develop some cravings but most of the time these cravings are edible food related such as pickles, chocolate, beer, etc. Sometimes, they tend to develop cravings for things with non-nutritional values such as clay, dirt, starch. The reason is unknown but according to López L et al, it may be connected to iron deficiency as an effort of the organism to get the necessary minerals or vitamins which are not provided through normal food. Such behavior in pregnancy can be related to an underlying physical or mental illness which can be dangerous for the baby by preventing the absorption of the normal nutrients (15).

Pica cravings are also encountered in children and are, just as described above, mineral related. Dr. K.M. Hambridge and Dr. A. Silverman published a case study in a 1973 issue of the Archives of Disease in Childhood of a two-year old girl diagnosed with zinc deficiency who had a history of six months of pica disorder beginning when she was one year and six months old by eating small metallic objects whom afterward was treated with zinc supplements and within three days her pica disorder disappear (16). In 2007 a paper released by Dr. D. Halliday and Dr. F. Iroegbu reported the case of a 22-year old adult Nigerian male who was admitted complaining of persistent vomiting, cough and weakness, legs and face edema. Kwashiokor was the first diagnose but following an X-ray, numerous metal objects in his upper abdomen were discovered. He underwent surgery and 497 metallic objects weighing 1.84 kilograms were removed from his stomach which surprisingly was intact. After ward, he was referred to a psychiatric hospital where he denied having swallowed all those objects and

especially no relative was able to confirm having seen him doing so which led the surgeons to the conclusion that there are some traditional practices in his homeland with several other factors such as poverty which most likely were the explanation of his condition (17).

Iron deficiency is not only encountered during pregnancy but it is also encountered in malignancies. This leads to anemia which leads to glossitis and patients tend to chew on ice (pagophagia) due its pain-killer effect (18). But after iron supplement therapy, there is an improvement especially in children with celiac disease with anemia due to iron deficiency (19,20). Thus, we could tell the ingesting of pebbles, probably for the pain-killer effect, caused the exteriorized hemorrhage which led to the severe anemia at the admission or the hemorrhage and subsequently the anemia was a chronic condition due to the tumor which was aggravated by the chronic ingesting of pebbles. Hadn't he ingested pebbles, hence bleeding and being anemic, we probably wouldn't have diagnosed him with stomach cancer or the diagnose would have been found much later.

## Conclusions

Pica disorder is frequently an intraoperative surprise for the surgeon as patients are reluctant to admit the intake of non-food elements of fear of being labeled as mentally ill.

When faced with a patient with pica on the operating table it is mandatory for the surgeon to carefully explore the stomach and the entire GI tract for underlying conditions and adapt the surgical treatment accordingly.

## Author's Contributions

Cédric Kwizera and Călin Molnar have equal contribution.

## Conflict of interest

The authors declare no conflicts of interests.

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Upper gastrointestinal bleeding (UGIB) is defined as bleeding proximal to the ligament of Treitz. Epidemiology The incidence of acute upper GI bleeding is ~100 per 100,000 adults per year. Upper GI bleeding is twice as common in men as in women...Â Angiography and embolization is used in refractory cases and is generally preferred over surgery. 85% of upper GI hemorrhage is from the left gastric artery territory. Extra-vascular contrast extravasation indicates the site of active bleeding and may be linear (pseudo-vein sign) or blotchy. Upper GI embolization is well tolerated because of the rich collateral blood supply. Upper Gastrointestinal Tract Hemorrhage. Chapter Â December 2010 with 1 Reads. DOI: 10.1016/B978-0-323-06397-5.00051-4.Â Slightly more sclerotherapy-treated patients had recurrent hemorrhage during the study (48 percent vs. 36 percent for the ligation-treated patients, P = 0.072). The eradication of varices required a lower mean (+/- SD) number of treatments with ligation (4 +/- 2 vs. 5 +/- 2, P = 0.056) than with sclerotherapy.