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Case review

Foreign bodies ingestion: What responsibility?

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ABSTRACT

The ingestion of foreign bodies is one of the most important and difficult emergencies for a physician to diagnose.

Accidental ingestion is more common in children, in patients with dental implants, in individuals with mental disability and in drug users. Voluntary ingestion is found in patients who are psychologically unstable, in prisoners or those who attempt suicide. Foreign bodies may be divided into food as fish bones, chicken bones, food bolus, meat, etc. or real foreign bodies such as orthodontic implants, needles, pins, glass, coins, etc.

The authors present a case of management, from the medicolegal point of view, of a female patient age 80, who complained, for some weeks of modest pain in the left iliac fossa, and afterwards the endoscopy showed a toothpick into the wall of the sigmoid colon. Assessed of the clinical status of the patient presented severe cardiac comorbidities so that before processing the patient to a second resolutive endoscopy, it was necessary to obtain the hemodynamic stability.

However the management of cases of accidental ingestion of foreign bodies is particularly difficult.

Medical errors can arise from the very first *contact* with the patient resulting in delays in appropriate treatment. The doctor to avoid compromising its position on medical liability, must use all the knowledge and diligence known by the art and science of medicine.

1. Introduction

The ingestion of foreign bodies can be one of the most important and most difficult clinical cases that for a physician to diagnose.[1]

From the literature it is clear that the presence of a foreign body in the organism is not unusual,[2] especially when concerning specific categories of people selected by age. In Italy, according to official data from the National Institute of Statistics (ISTAT) in 2010, 27% of the so-called "accidental" deaths in children aged 0–4 years is due to suffocation caused by ingestion/inhalation of a foreign body.[1]

The ingestion of foreign bodies, voluntary or accidental,[3] it is noted also in adults, very often remains undiagnosed for a long time.[2]

Foreign bodies may be divided into food as fish bones, chicken bones, food bolus, meat, etc. or real foreign bodies such as orthodontic implants, needles, pins, glass, coins, etc.[1]

Adults frequently do not provide a correct clinical history, voluntarily or not, in this case the diagnosis and the therapeutic setting become more complex.[1]

To date, the imaging test more accurate in cases ascertained or suspected of foreign body ingestion is computed tomography (CT) that allows accurate diagnosis in 14% of cases,[4] in terms of location, intraluminal or extraluminal, size and nature.[5]

The final diagnosis, however, is most commonly performed with exploratory laparotomy in 53% of cases, endoscopy in 19%, imaging study in 14% and finally autopsy in 12%.[4]

The review of literature shows clearly that even seemingly harmless objects can cause serious and sometimes fatal injuries of internal organs.[4]

In this paper we present a case of accidental toothpick ingestion.

2. Case report

Patient, female, age 80 comes to the Digestive Endoscopy Department, sent by the general practitioner to perform a colonoscopy. The patient complained about moderate pain for some

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weeks in the left iliac fossa and on the advice of the attending physician she had already executed the fecal occult blood test, resulted positive.

The patient, before that event, was in apparent good health (hypertension was present but pharmacologically treated), and there were no signs or symptoms of neurological deficit or psychiatric illness.

Anamnesis reported hysterectomy and oophorectomy associated with hemithyroidectomy for the presence of a thyroid nodule.

Endoscopic examination (colonoscopy) showed numerous diverticula of the sigmoid colon and the presence of a foreign body, which appeared thin and elongated, similar to a toothpick, places like a bridge between the two walls of the bowel, probably penetrated deep into the colonic wall with two holes. The bowels mucosa surrounding the holes of entry of the toothpick showed signs of inflammation (Fig. 1).

It was decided to remove the foreign body at the same endoscopic examination, performing some delicate attempts, unfortunately, with unsuccessful outcome. The procedure of excision was suspended in order to exclude the presence of a phlogistic involvement of the sigmoid extramural and the patient performed imaging exams.

In order to further develop characteristics and retention time of the foreign body inside the bowels, was asked to the patient to remember a more precise time of the toothpick ingestion, probably resulted during ingestion of meat, but the outcome was unsuccessful.

Because of the subsequent aggravation of the cardiac conditions of the patient, who had ischemic heart disease, left bundle branch block, ventricular and supraventricular extrasystoles, mild mitral insufficiency and hypertension, it was decided to start with treatment. During hospitalization were performed blood tests, from which was not observed electrolyte imbalance, but slight increase in white blood cell count, in erythrocyte sedimentation rate and C-reactive protein.

Plain abdominal radiographs was performed and showed no subdiaphragmatic free air or bowel airfluid levels.

The barium enema, performed with double contrast, showed the presence of marked diverticulosis of the descending colon that appeared even more overt at the sigmoid colon, presenting an extension of 5 cm, the wall showed a reduced distensibility compared with diverticulitis.

The abdominal CT scan showed thickening of the wall of the sigmoid colon and the absence of peridiverticular abscesses.

The patient was treated, during hospitalization, with cardiological medical therapy (with β-blockers), and when in the days after was obtained hemodynamic stability, she was subjected to endoscopy in order to remove toothpick. During the examination, with the aid of a foreign body clamp, the toothpick was extracted successful and with the use of endoscopic clips, the two inlet holes located in the wall of the bowel, which were placed in a diametrically opposite way, were closed.

Finally, the patient was discharged from the hospital in excellent health after two day and was given oral antibiotics for 5 more days. The patient did well after six months.

3. Discussion

On the whole, international cases show that accidental ingestion is more common in children, in patients with dental implants, in people with mental handicap and in drug abusers,[6] in the case described the patient is elderly (80 years old).

The toothpick ingestion, as in our case, is commonly associated with intestinal lesions due to the bilateral ends pointed and the length (about 6.5 cm) of this object. In fact, it was precisely its form to be the cause of transit problems in the intestinal lumen, especially at the level of shrinkage of the winding sections of the gastrointestinal tract, or when it switching from the movable portions of the intestine (ileum and sigmoid colon) to other fixed (cecum and rectum).[7] The most frequent sites of arrest are the duodenum (25%) and the sigma (14%).[7]

Even if in the majority of cases they cross the gastrointestinal tract[8] and are eventually eliminated, objects long, hard or sharp (like the toothpick) are responsible for many complications and they have an incidence of 0.2/100.000 inhabitants.[9]

In our case the foreign body was anchored to the walls of the digestive tract and could over time result in perforation (incidence 15%–35%),[10] obstruction,[5] bleeding,[8] granuloma,[11] or could migrate to adjacent organs causing liver abscesses,[12] fistulas, peritonitis,[13] or penetrate into the vessels resulting in migration to the heart causing bacterial pericarditis,[14] or to the lungs causing pneumonia or lung abscess,[4] or its further stay could have fatal results.[1]

In literature, in fact, are reported cases of bacteremia from gram positive germs without signs of perforation of the gastrointestinal tract,[8] as well as cases of death due to ingestion of foreign bodies not treated appropriately.[15]

The toothpick ingestion lesion diagnosis was not very easy, not only because patient did not report the ingestion of a foreign body and was not able to place temporally the accidental event, but also because having non-specific symptoms in the first instance was perform the direct abdomen scan and the toothpick, being a wooden object, was radiolucent,[16] on the contrary the ultrasound could show an hyperechoic image and the CT an high-density image.[16]

It must be emphasized that the patient presented for some weeks “moderate pain” in the left iliac fossa, which could suggest colic disorders, irritable bowel syndrome or presence of diverticula, and in literature are reported cases where the toothpick presence mimics several other pathologies with presentation of symptoms related to these, such as pneumonia, renal colic, mediastinitis,

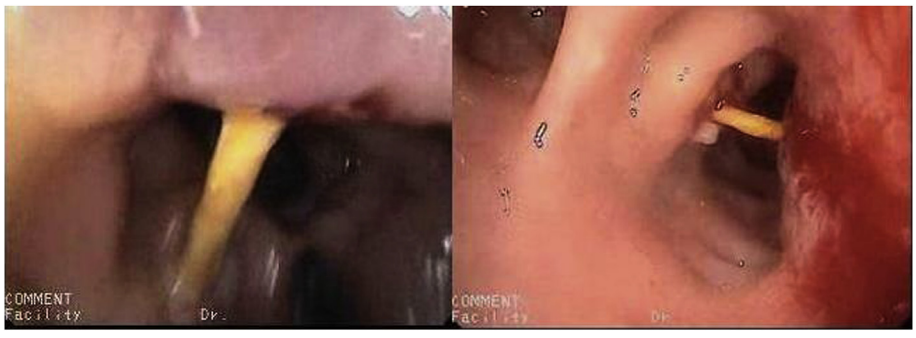

Fig. 1. Endoscopic outcome of position of the toothpick.