

Case Report

Case report: endoscopic remotion of a foreing body in the upper digestive tract: scalpel blade

Relato de caso: remoção endoscópica de corpo estranho do trato digestivo superior: lâmina de bisturi

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ABSTRACT: The presence of a foreign body in the upper gastrointestinal tract (GIT) is not unusual, especially in psychiatric patients and kids. The larger number of ingested objects stays in the superior GIT. Complications chance according to the foreign body characteristics and the way they are ingested. However, only 10 to 20% of the cases will need endoscopic approach. The current case is an old patient, previously healthy, subjected to an orthodontic surgery, which resulted in an accidental ingestion of a scalpel blade that stayed in the stomach. He went through a chest X-Ray and upper digestive endoscopy, which was used for diagnosis and treatment. There was not any injury caused by the blade during the transfer to the stomach, neither during the remotion. The procedure went through without any complications and the patient had a full recovery.

KEY WORDS: Endoscopy; Foreign Body Migration; Gastrointestinal Tract; Upper Gastrointestinal Tract.

RESUMO: A presença de corpo estranho no trato gastrointestinal (TGI) superior não é incomum, principalmente em crianças e pacientes psiquiátricos. A grande maioria dos objetos ingeridos permanece no TGI superior. As complicações variam conforme as características do corpo estranho e a forma como são ingeridos. Grande parte não precisará de abordagem qualquer. No entanto, cerca de 10% a 20% dos casos necessitarão de abordagem endoscópica. O caso em questão trata sobre um paciente idoso, previamente hígido, submetido à cirurgia ortodôntica, com ingestão acidental de lâmina de bisturi e posterior impactação da mesma no estômago. Foi submetido à radiografia de tórax e endoscopia digestiva alta, com finalidade diagnóstica e terapêutica. Não houve lesão causada pela lâmina durante o trajeto e/ou durante a remoção, seguindo o procedimento sem intercorrências e recuperação plena do paciente.

PALAVRAS-CHAVE: Endoscopia; Migração de Corpo Estranho; Trato Gastrointestinal; Trato Gastrointestinal Superior.

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INTRODUCTION

The presence of a foreign body in the upper gastrointestinal tract (GIT) is not unusual, as more than 100,000 cases are reported annually in the United States alone¹. This incidence occurs mostly in children between the ages of 6 months and 3 years (more than 75% of cases), with the ingestion of small objects such as coins, rings, magnets and batteries². Regarding the adult population, most cases are associated with patients with psychiatric disorders or elderly people with teeth³.

Most ingested foreign bodies tend to resolve spontaneously, passing through the entire GIT without major problems; only 10 to 20% of cases require endoscopic removal. There are risk factors associated with foreign body retention, especially in the esophagus, including younger age, congenital malformations, previous esophageal surgery, gastroesophageal reflux and neuromuscular diseases⁴.

Among the objects that remain impacted, studies have shown that most remain in the upper gastrointestinal tract, and in the study by Roura et al, 99% of cases followed this line⁵. According to this, a study from 2021 showed that 83% of objects remain in the esophagus, 11% descend into the stomach and only 2% remain impacted in the pharynx and duodenum⁶. The related symptoms and complications will depend on the type of object ingested, where it was lodged and how long it persisted in the GIT, and can range from being asymptomatic to causing intestinal perforation or fistula^{7,8}.

Depending on the shape of the object, complications can arise, as in the case of sharp objects, which cause perforations in 15% to 35% of cases^{7,8}. Even blunt objects can cause complications such as intestinal perforation⁹ and even late appendicitis¹⁰. Some authors suggest that larger objects, duration of impaction, esophageal location, age ≥ 60 years and delayed endoscopic management are risk factors for complications⁶.

The doctor will be responsible for assessing whether endoscopic intervention is necessary. The European Society of Gastrointestinal Endoscopy (ESGE)¹¹ and the American Society of Gastrointestinal Endoscopy (ASGE) Guideline¹², recommend urgent therapeutic esophagogastroduodenoscopy, which takes place within the first 24 hours, for sharp foreign bodies in the stomach or duodenum; when there is the presence of objects greater than 5 cm in length in the proximal duodenum or above it and in cases of food ingestion that is within endoscopic reach¹¹. This approach is recommended in order to remove the objects before they pass through the pylorus and consequently come into contact with the intestine, which can lead to perforation, especially after passing through the ileocecal valve¹³.

In certain cases, endoscopic intervention should not be the choice. These include those in which the patient is asymptomatic and those in which spontaneous passage of the foreign body is likely, in this cases expectant management of the patient can be chosen². In addition, when the foreign body is distal to the ligament of Treitz, removal by endoscopy is unlikely, in this situation, small bowel enteroscopy becomes the most viable alternative in cases where spontaneous passage is not possible⁴. When removing contraband packages containing illicit drugs, the endoscopic approach is also not recommended due to the risk of

rupture, which can lead to fatal overdose¹.

Patients who have ingested sharp objects can experience a range of symptoms, from mild to severe. Some examples of these symptoms are subcutaneous emphysema, pneumomediastinum or pleural effusion, airway compromise, intestinal perforation or penetration, aortic or tracheal fistulas or cardiac tamponade^{3,7,8,11}. In addition to the clinical picture, the diagnosis of foreign body ingestion can be aided by imaging tests. Digestive endoscopy, simple chest X-rays and computed tomography can all be requested². However, there are sharp objects that cannot be seen on chest X-rays, so endoscopy should be used in these cases.

Removal of sharp objects should be carried out urgently (within the first 24 hours), using devices to protect the mucosa, such as an overtube or latex rubber hood. Treatment using flexible endoscopy is a safe technique with high success rates and low morbidity and mortality¹³. The rigid endoscope approach with the patient under general anesthesia is also an option. If endoscopic treatment fails, daily radiographic examinations should be carried out to assess the passage of the foreign body and management should be hospital-based with close observation. Surgical therapy should be considered especially in cases that develop complications and in cases of non-progression of the object⁴.

OBJECTIVE

The main objective is to report an unusual case of foreign body removal that is not often found in the literature.

METHODOLOGY

This study was based on an atypical case of ingestion of a pointed foreign body. The patient's data was collected through a clinical history and chest X-ray and upper digestive endoscopy examinations. In this context, the research subjects are doctors and medical students from the Federal University of São João Del Rei.

In addition, a bibliographical survey was carried out on foreign body ingestion, its incidence, and methods of approach, to provide a theoretical-methodological foundation for the development of this study. The articles used for this study were obtained from digital platforms such as SciELO, Lilacs and UptoDate, using keywords such as "foreign body ingestion" and "upper digestive endoscopy". From this search, the most relevant articles were selected. The information was analyzed after reading the entire bibliography, making it possible to select the most relevant and up-to-date points on the subject, in relation to treatment, management and previously reported cases, for example.

This case report is presented as a way of contributing to the dissemination of scientific knowledge in the field of health. This case report was authorized for publication by the patient, preserving his identity and respecting the ethical issues involved.

CASE REPORT

Patient P.A.C., 61 years old, previously healthy, not edentulous, with no other comorbidities. He was undergoing dental treatment when the blade of a scalpel handle came loose

and met the posterior wall of the oropharynx, triggering the swallowing reflex. The patient was immediately taken to the São Judas Tadeu Hospital in the city of Divinópolis-MG, where he underwent a simple chest X-ray (Figure 1) and Upper Digestive Endoscopy with the following report:



Figure 1 - Chest X-ray showing the presence of a scalpel blade in the left hemithorax, lower region of the image

- Esophagus: Normal internal diameter and elasticity, pink and flat mucosa, allowing the vessels of the submucosa to show through. The squamocolumnar transition coincides with the diaphragmatic clamping.

- Stomach: Small amount of clear stasis fluid. Internal conformation, distensibility, folds and mucosa of the body and fundus of normal appearance. Antrum with flat, pink mucosa. Centered pylorus. With hindsight, the hiatal orifice was closed and there was a foreign body (scalpel blade) in the stomach.

- Duodenum: Wide duodenal bulb, velvety mucosa, usual color, easy transposition to the second duodenal portion.

During the examination itself, a therapeutic measure was taken to remove the foreign body using a distal cap to prevent injury to the upper digestive tract during removal. The procedure was uneventful and was accompanied by an anesthesiologist under Propofol-based sedation, and a flexible endoscope was used to remove the foreign body.

DISCUSSION

The complication rate for ingesting foreign bodies impacted in the upper digestive tract is less than 1%. However, emergency treatment (within 24 hours) is necessary due to the risk of perforation in the case of sharp or piercing objects^{2,12}. Patient P.A.C. was treated immediately after his incident, without complications occurring. This shows that opting for the endoscopic route, when indicated, is the most appropriate course of action¹¹. The diagnostic and therapeutic importance of upper digestive endoscopy should be emphasized. It allows a less invasive approach and reduces the rate of possible complications related to the trauma caused by the foreign body.

In addition, according to the ESGE guidelines, sharp foreign bodies should be removed with the sharp end distal to the endoscope, to reduce the risk of injury during extraction¹¹. This recommendation was followed in the case presented,

demonstrating once again the effectiveness of the technique.

The patient in this report does not belong to the age group most affected by this complication, as it is more common in children, and he is a 61-year-old adult⁶. In addition, the patient did not have any other characteristic that corroborates the higher incidence of foreign body ingestion, such as a psychiatric disorder, for example⁴. However, the ingested scalpel blade lodged in the upper GIT, more specifically in the stomach, which is one of the most common places to find ingested foreign bodies.

Furthermore, in the present case, the foreign body was stuck in the hiatal orifice, a location that did not indicate spontaneous passage of the object. Therefore, endoscopic intervention would have been indicated even if it hadn't been a sharp object.

In the case presented, the patient was immediately referred to hospital for treatment before any symptoms appeared. As a result, imaging tests were essential tools for locating the object and for therapeutic management. Because it was a radiopaque object, and because it was a quicker and more readily available test, a chest X-ray was performed first, which showed the position of the blade. This visualization would not be possible for some sharp objects, such as glass or toothpicks.

The patient was then approached with a flexible endoscope for diagnostic and therapeutic purposes. This examination is described in the literature as ideal for removing sharp objects¹². However, it is known that it is also possible to perform this approach using rigid endoscopy under general anesthesia, depending on the location of the object.

Regarding the technique used to remove the object, a distal cap was used to protect the mucosa during removal (Figure 2). It was used as a latex rubber hood, the auxiliary instrument described for removing foreign bodies, but which was not available at the time of the approach. This justifies the importance of the present study, which in addition to confirming the efficacy of Upper digestive endoscopy in removing foreign bodies and reporting a case of low incidence, presents an alternative to the latex rubber hood, which is not always available in hospitals.

It is also known that the ingestion of sharp objects has a higher rate of complications when compared to other objects. However, most of them, once they reach the small intestine, pass through the entire gastrointestinal tract without complications. In these cases, is recommended a diet rich in fiber, avoiding laxatives. Serial X-rays and stool screening are carried out, and surgical intervention is only considered after 3 to 4 days have passed without the object having progressed¹⁴.



Figure 2 - Removal of the number 12 scalpel blade endoscopically with the aid of a distal cap.

CONCLUSION

Finally, in the case presented, there was a good

resolution, with no complications. This demonstrated the safety of the foreign body removal technique using flexible endoscopy, which is known for its high success rate.

Authors' participation: Edson Araújo Rios Junior - Literature review, Writing of the article; Clara Lemos Trindade Carneiro - Literature review, Writing of the article; Natália Rodrigues Moraes Silva - Literature review, Writing of the article; Giovanni Coelho Greco - Guidance.

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