

Endoscopic Removal of Duodenal Perforating Fishbone - A Case Report

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Rezumat

Îndepărtarea pe cale endoscopică a unui os de pește ce a determinat perforație duodenală - prezentare de caz

Introducere: Ingestia accidentală de corpuri străine este frecventă în practica curentă. În timp ce perforația ileonului și a jejunului sunt comun întâlnite, perforația duodenală este rară. Raportăm prin această lucrare experiența noastră privind această rară entitate chirurgicală.

Prezentare de caz: Prezentăm cazul unui pacient în vârstă de 31 ani cu perforație de tract gastrointestinal la nivelul segmentului 2 duodenal determinată de ingestia unui os de pește. Pacientul a fost internat în regim de urgență pentru durere abdominală. La examenul clinic prezenta durere la palpare în flancul drept, iar analizele de sânge au relevat leucocitoză. Ecografia nu a avut valoare diagnostică, dar tomografia computerizată a decelat un corp străin ingerat situat în a doua porțiune a duodenului. Un os de pește ce perfora duodenul a fost recuperat prin endoscopie. Pacientul a fost tratat non-operator și externat fără complicații în a treia zi după endoscopie.

Concluzii: Îndepărtarea endoscopică și managementul non-operator sunt posibile în cazuri atent selectate de perforații duodenale determinate prin ingestie de oase de pește.

Cuvinte cheie: corp străin, os de pește, perforație duodenală

Abstract

Background: Accidental ingestion of foreign bodies is common in clinical practice. While perforation of the ileum and jejunum due to the ingested foreign body is common, duodenal perforation is rare. In this report, our experience with this rare entity is shared.

Case report: Here we present a 31-year-old patient with gastrointestinal tract perforation at the second part of the duodenum due to an ingested fishbone. The patient was admitted to the emergency room with abdominal pain. Right upper quadrant tenderness was detected at physical examination, and leukocytosis on the laboratory test results. Ultra-sonography was not diagnostic, however, computerized tomography showed an ingested foreign body in the second part of the duodenum. A fishbone perforating the duodenum was retrieved by endoscopy. The patient was managed non-operatively, and discharged without any problems on the third day after endoscopy.

Conclusion: Endoscopic removal and non-operative management may be feasible in carefully selected patients with duodenal perforated fishbone ingestion.

Key words: foreign body, fishbone, duodenal perforation

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Introduction

Foreign body (FB) ingestion is a common emergency clinical entity, nonetheless, most of them leave gastrointestinal (GI) tract spontaneously. Up to 20 % of FB ingestions require endoscopic removal while surgery is necessary for 1% of them (1). Despite fishbone ingestion may cause GI perforation as being

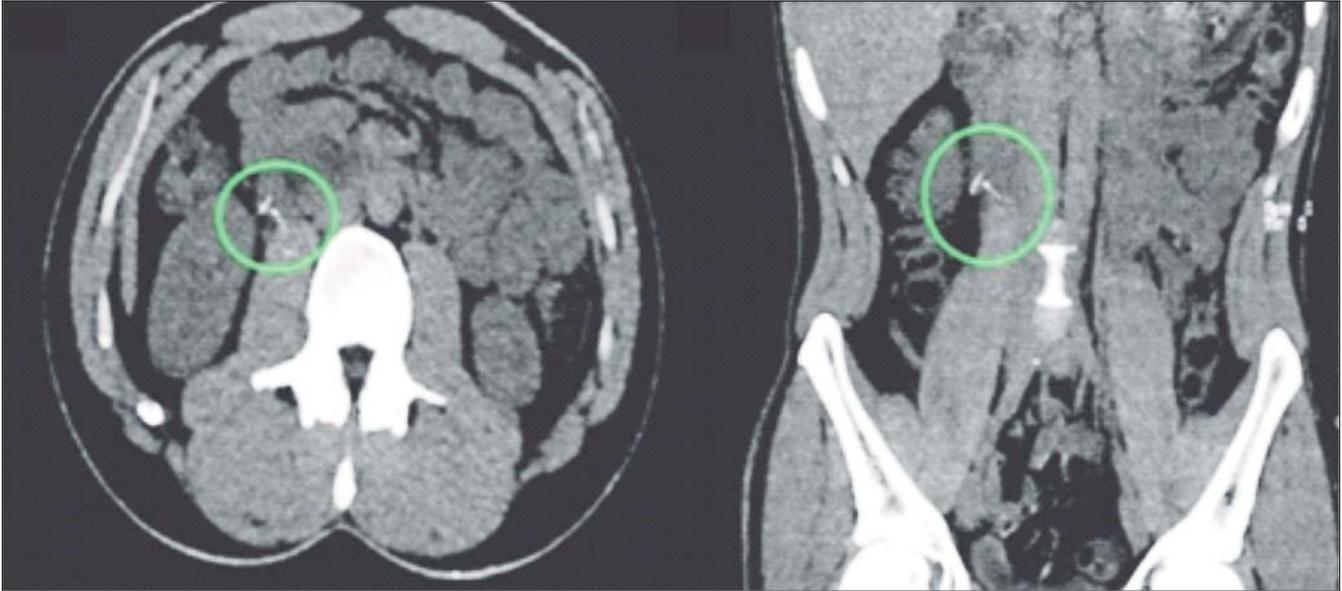


Figure 1. Abdominal computerized tomography findings: the foreign body was observed as a linear object with 80 HU density extending from the location of duodenum to retroperitoneal region in the axial (A) and coronal (B) images

a pointed object, less than 1% of them cause GI perforation. Perforation generally occurs at the ileum (2), and abdominal pain is the most frequent symptom. Usually the FB ingestion is not reported in the patient history since it was swallowed unaware, or it was not considered to be important by the patient. A case of duodenal perforation due to ingested fishbone, that was removed endoscopically, was reported in this paper.

Case report

A 31-year-old male patient with severe abdominal pain admitted to the emergency room. The only symptom reported by the patient was abdominal pain that was started two days ago.

He had rebound tenderness located at the right upper abdominal quadrant. Laboratory tests were normal except the white blood cell count of $15600/\text{mm}^3$. Ultrasonography (US) revealed right paracolic fluid collection that might represent acute appendicitis. Since the physical examination and the US findings were not correlated, abdominal computerized tomography (CT) scan was performed. A 2.5 cm linear hyperdense FB penetrating the entire bowel wall at the second portion of duodenum was detected in the CT scan (Fig. 1A-B). Considering FB ingestion, his history was re-questioned and the patient remembered that he had eaten sea bass two days ago. With upper GI endoscopy the diagnosis was confirmed, and the fishbone was removed (Fig.2). Since perforation area was pinpoint small and there was not free air detected in the CT scan, a decision to attempt non-operative management was made. Intravenous fluids and broad spectrum antibiotics were administered for two days, and oral diet was started after rebound tenderness disappeared. Patient was discharged at the third day on oral antibiotics, without any complications.

Discussion

FB ingestion is usually encountered in children. It is rare in adults, with a higher incidence in males comparing to females (3,4). Most of the ingested FB (70- 90 %) can spontaneously leave the GI tract within one week after ingestion (5,6). Impaction, perforation, or obstruction generally occurs at the areas of acute angulations, or physiologic narrowing such as the cricopharyngeus muscle, aortic arch, left main stem bronchus, gastroesophageal junction or lower sphincter, pylorus, duodenal sweep, ileocecal valve and anus (5).



Figure 2. Endoscopic image of the fishbone before endoscopic retrieval

GI perforation due to ingested FB occurs approximately at 1% of the cases, and the rate of perforation rises to 15-35% with sharp objects (4-6). Clinical presentation varies depending on the localization of the perforation and the extent of the peritonitis. The most prominent symptom is abdominal pain (95%). Acute appendicitis, peptic ulcer perforation, and acute diverticulitis should be considered in differential diagnosis (2). Since most of the patients are not aware of the ingestion, patient history may not help to establish the diagnosis (2,7,8).

Objects larger than 2 cm in diameter cannot pass pylorus, and objects larger than 5 cm cannot pass duodenal bend (6,9). While the colon (41-54%) and distal ileum (30-39%) are the most common places of perforation (2,4,7,8), duodenal perforation is not frequent (7,8). Plain X-Ray is simple and useful in the diagnosis of ingested FB. However, fishbone, glass, plastics, and small metal objects may not be seen under X-Ray (3,4). Abdominal CT may be helpful in patients with peritoneal irritation findings (4,9).

There are several studies reporting that from 81% to 91 % of the perforations due to ingested FB were diagnosed during surgical exploration (7,8). However, when the suspicion or patient history lead an initial diagnosis of FB ingestion, majority of them may be managed non-operatively (3,9). Endoscopy is the first choice for the removal of the FB in upper GI (5,9). Endoscopic removal may be possible up to 10 % of the cases (6,9). Surgical intervention may be necessary if the object does not leave the GI tract within one week, or it stays at the same place within three days, or the clinical course of the patient deteriorates (5,9). Possible complications of duodenal perforating FB are hepatic abscess, sepsis, retroperitoneal hematoma and hydronephrosis (5,8,10). Percutaneous drainage is recommended in case of abscess formation, and surgical exploration may be necessary when there is a FB within the abscess (4,5,9).

Conclusion

In conclusion, FB ingestion and possible GI perforation should be kept in mind in a patient admitting with abdominal pain. Clinical suspicion and questioning the patient history may help to avoid unnecessary surgery. Abdominal CT scan is

helpful both in detecting the localization of ingested FB, and GI perforation. Endoscopy can be utilized in removal of FB ingested at the upper GI tract. However, patient selection for non-operative management after endoscopic retrieval of the FB should be made carefully due to the increased risk of morbidity and mortality of GI perforation.

Conflict of interest

No conflict of interest exists.

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