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Extra luminal migration of ingested fish bone to the spleen as an unusual cause of splenic rupture: Case report and literature review



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ABSTRACT

INTRODUCTION: The ingestion of foreign bodies (FB) is a common problem worldwide and affects all ages; it is, however, particularly important in the pediatric population and in mentally impaired adults. The typical outcome of FB ingestion is good, since the majority of ingested material is passed spontaneously through the gastrointestinal tract. Serious complications can occur, however, including bowel perforation or obstruction and gastrointestinal bleeding, amongst others. Extraluminal migration of ingested foreign bodies is very rare and reported cases so far have shown, more commonly, migration to neck structures, with very few reported cases of migration to the abdomen. To date, there is no reported case of extraluminal migration of ingested FB to the spleen.

CASE PRESENTATION: A 59-year-old man presented with acute abdominal pain and dyspnea. A CT scan revealed a FB within the spleen, with a ruptured capsule and perisplenic collection. Surgery was performed and a 3cm-long fishbone was extracted, with hemoperitoneum secondary to spleen rupture. The patient was discharged on the third postoperative day with good recovery and without any complications; pneumococcal polysaccharide vaccination was provided.

CONCLUSION: FB ingestion is a relatively benign condition; however, some serious complications can arise infrequently. The patient reported herein is the first in the literature to present a splenic rupture due to extra luminal migration of an ingested fish bone.

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1. Introduction

The ingestion of foreign bodies (FB) is a common problem worldwide and affects all ages, however it is particularly important in the pediatric population and in mentally impaired adults [1,2]. Commonly ingested FB include medication packaging, dentures, coins and fish and chicken bones, amongst others [3]. The typical outcome of FB ingestion is good, with approximately 80% of ingested material passed spontaneously through the gastrointestinal tract without requiring any invasive medical intervention, 20% of patients requiring an endoscopic removal, and just 1% of ingested material will cause perforation requiring surgical treatment [2,4,5]. It is important to mention that serious complications can occur due to ingested FB, such as; obstruction, ulcer formation, gastrointestinal (GI) bleeding, GI perforation, tracheoesophageal

fistula formation and bacteremia, amongst others [4,6–10]. Fish bones are the most common objects that can cause GI perforations [1]. When this FB become impacted, they often do so at sites of physiologic narrowing, such as the pharynx, upper and lower esophageal sphincter, stomach, duodenum and ileum [11]. The most usual site is the ileum and the most common complication is an intra-abdominal abscess [12]. Extraluminal migration of ingested FB is extremely rare. We present a case of extraluminal migration to the spleen generating splenic rupture and hemoperitoneum which presented as acute abdominal pain.

2. Case presentation

A 59-year-old man was admitted to the emergency room (ER) with a severe sharp abdominal pain of 8 h of duration. The pain had an insidious onset, was localized on the left upper and lower quadrant, was exacerbated with breathing movements and was associated with dyspnea.

Vital signs were: temperature 37.4°C; blood pressure 84/53 mmHg; heart rate 108 beats/min; and respiratory rate 25 breaths/min. The initial physical examination revealed normal

Abbreviations: FB, foreign bodies; GI, gastrointestinal; ER, emergency room.

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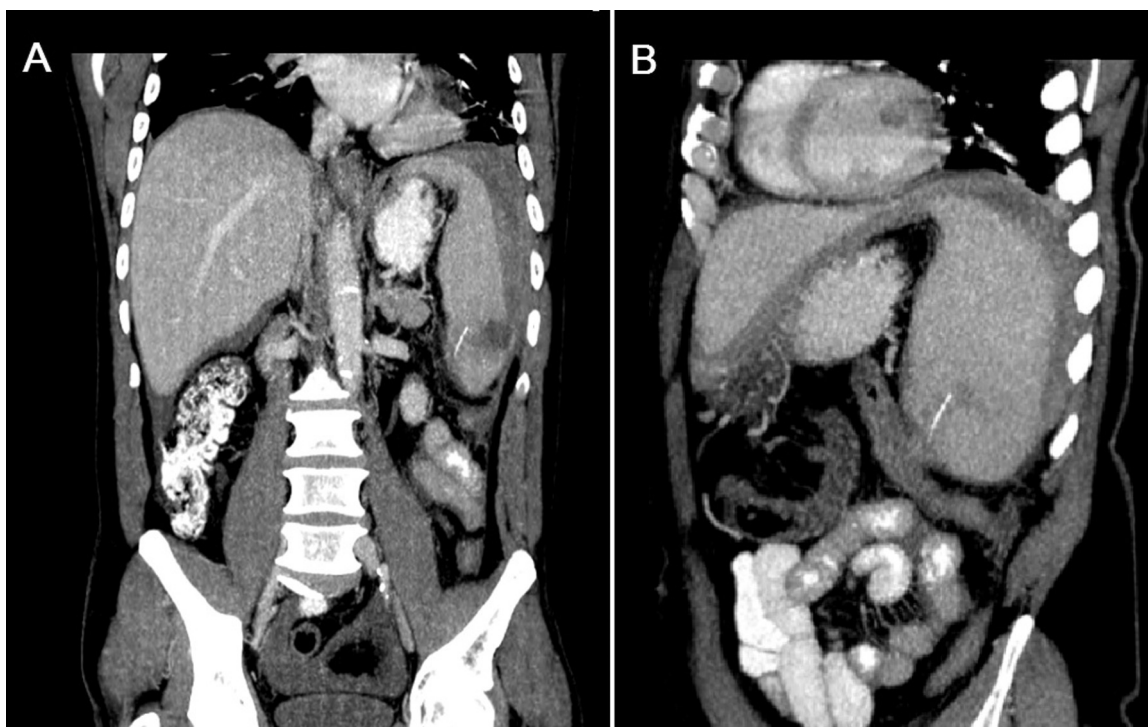


Fig. 1. Abdominal CT scan. (A) Coronal plane (B) Sagittal Plane. Shows splenic rupture associated with a subcapsular hematoma and the presence of a linear hyperdense foreign body in the spleen, of 3.0 cm, close to the splenic flexure of the colon.

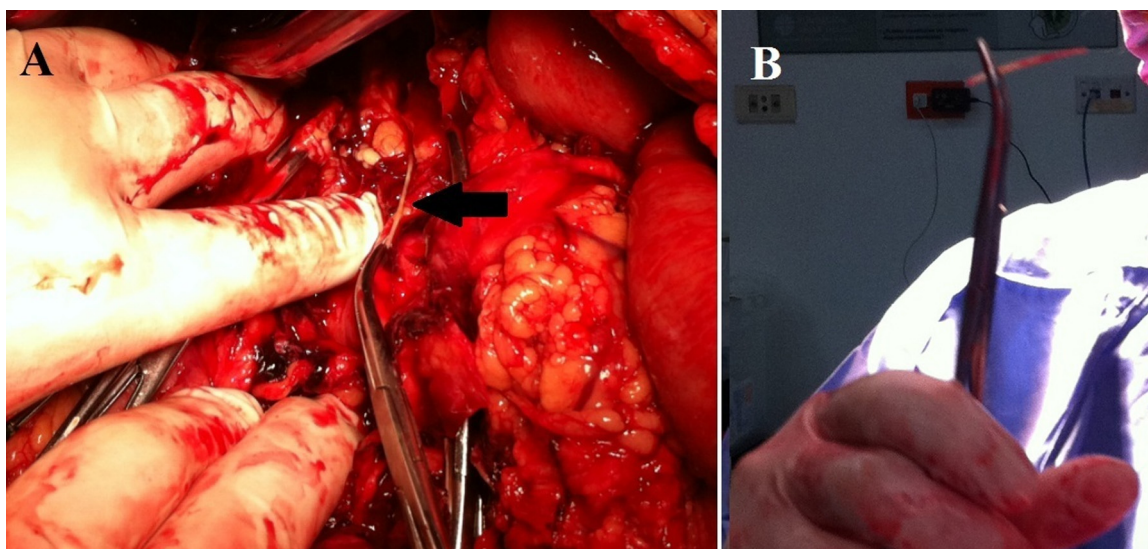


Fig. 2. Laparotomy and splenectomy images. (A) Surgical field during splenectomy and surgical drainage of hemoperitoneum that shows the presence of a large fishbone (Black arrow); (B) Fishbone recovered during surgery.

breathing sounds and regular heart beat without any murmur. He had normal bowel sounds, tenderness on the upper and lower left quadrant and muscle guarding without rebound pain.

Serum laboratory examinations showed: a white blood cell count of $10,760 \text{ mm}^3$, neutrophils of 79%, lymphocytes of 10.2%, hemoglobin 11.5 g/dL and a platelet count of $259,000/\mu\text{L}$. Serum biochemistry tests revealed BUN of 12 mg/dL, creatinine 1.12 mg/dL, C-reactive protein of 8.8 mg/dL, and lactate of 1.8 mmol/L. Arterial blood gases showed pH: 7.4, PCO_2 : 27.6 mmHg, PO_2 : 99.7 mmHg, HCO_3^- : 19.7, BE: -3.3 , which were compatible with acute respiratory alkalosis.

After primary ER medical treatment he was evaluated by general surgery and an abdominal and chest contrasted CT scan was ordered, which reported a splenic rupture associated with the presence of a linear FB of 3.0 cm, focal inflammatory changes and intrasplenic collection (Fig. 1). Written and informed consent was obtained and, an exploratory laparotomy was therefore performed to resolve his acute abdominal pain due to the high risk of peritonitis (Fig. 2).

An enlarged spleen was found during the surgery, with a traumatic rupture of 80% of its capsule in the posterior area due to a fishbone of $3 \times 0.1 \times 0.1 \text{ cm}$. The patient had a 500cc

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