CASE REPORT JSLS

Laparoscopic Removal of a Pancreatic Foreign Body

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ABSTRACT

We present a case report of a laparoscopically retrieved foreign body that migrated into the pancreas. The patient is a 44-year-old man who presented with epigastric pain and was subsequently found by computed tomographic scan to have a foreign body in the head of the pancreas. After attempted endoscopic retrieval, we successfully removed the foreign body laparoscopically, thus avoiding laparotomy. Laparoscopy is an effective tool for pancreatic exploration.

Key Words: Foreign body, Pancreas, Laparoscopy.

INTRODUCTION

Accidental foreign body ingestion remains a common clinical problem. Most case reports are of ingestion of sharp objects that can be retrieved by indirect laryngoscopy or flexible endoscopy in the majority of cases. Foreign bodies have been found to migrate to the pancreas from the gastrointestinal (GI) tract. Presentation varies widely from a 45-year-old man who was asymptomatic by clinical and laboratory data,[1] to a 39-year-old man with pancreatitis, gastric varices, and splenic artery pseudoaneurysm,[2] to a 60-year-old female who presented with what appeared to be locally advanced pancreatic carcinoma.[3] Also, reports exist of foreign body migration to the liver as well as into the pancreas.[4,5] There are isolated reports of complications of fish bone ingestion including perforation to the pharynx, esophagus, stomach, small intestine, Meckel's diverticulum, and colon.[6–8] There have been published reports of laparoscopic removal of foreign objects, such as sewing needles from a pelvic cul-de-sac,[9] intrauterine devices,[10] and a broken intraperitoneal catheter.[11] However, only one report has been made of laparoscopic removal of fish bone from the head of the pancreas.[12] We report the successful laparoscopic removal of a piece of wire that had perforated the stomach and migrated into the head of the pancreas, resulting in a peripancreatic abscess.

CASE REPORT

A 44-year-old man presented to our hospital on September 2, 2005 with epigastric pain. His white blood cell (WBC) count was 16.1; hemoglobin (Hgb), 14; amylase 119; lipase 190; his urinalysis (UA) was negative. A computed tomographic (CT) scan of the abdomen and pelvis was performed, and the patient was given the preliminary diagnosis of diverticulitis. He was placed on Cipro and Flagyl and sent home. However, the next day, the formal CT scan read showed that he had a foreign body in the gastric body with a peripancreatic abscess **(Figure 1)**. He was admitted to the hospital and reported continued epigastric pain but did not have nausea, vomiting, melena, hematemesis, or recollection of ingesting a foreign body. His amylase then was 151, and lipase was 235. Liver function tests were normal. A gastroenterology consult

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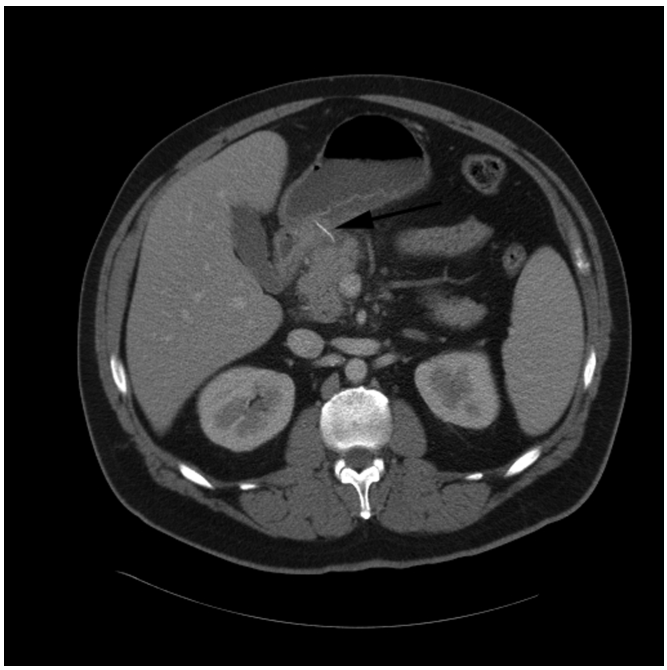

Figure 1. A hyperdense foreign body is present in the posterior wall of the stomach migrating into the head of the pancreas (black arrow).

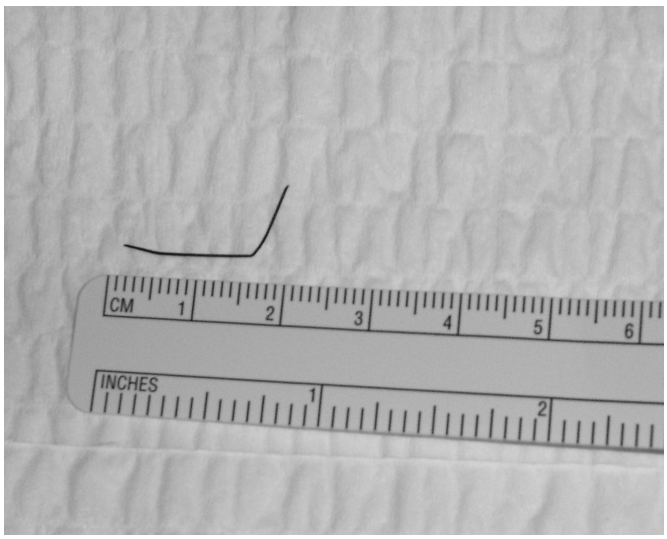

Figure 2. The foreign body that was removed was a 2.5-cm black wire.

was obtained, and an attempted esophagogastroduodenoscopy with endoscopic ultrasound for guidance was performed to remove the foreign body. This was unsuccessful, and the patient agreed to undergo a laparoscopic removal of the pancreatic foreign body.

We approached the foreign body and abscess cavity by gaining entrance to the lesser sac through the gastrocolic ligament. The posterior stomach was exposed and revealed dense adhesions to the pancreas. These adhesions were taken down using both sharp and blunt dissection. The posterior antrum of the stomach was dissected off the head of the pancreas, until a small abscess cavity was found near the head of the pancreas. This abscess was entered, and a small amount of pus was irrigated from the cavity. Further dissection revealed a small black wire that was removed with a Maryland grasper **(Figure 2)**. We presumed that a gastric perforation was present in this area, so dilute methylene blue solution was instilled into the stomach, which failed to detect a perforation. An omental flap was raised and brought up in a retrogastric manner and secured with a single intracorporeal suture. A 5-mm Blake drain was placed in the lesser sac. The patient's course was uneventful after surgery. A Gastrografin swallow on postoperative day 1 was negative for any perforation. The patient's amylase and lipase peaked to 341 and 375, respectively, on postoperative day 1, but went down to 81 and 57 on postoperative day 3. After tolerating a diet, the patient's drain was removed, and he was discharged home on postoperative day 3. At 2-week follow-up, he was symptom free.

DISCUSSION

The management of ingested foreign bodies remains a challenging clinical problem. Most are excreted and only 1% cause perforation.[13] Previous reports suggest that if the patient has no symptoms, then they can be observed and followed by repeated clinical examinations and plain abdominal films. However, if the patient becomes symptomatic or has disturbances in the GI tract, then further intervention is warranted. Most case reports are of patients who have psychiatric illness, developmental immaturity, altered level of consciousness, or who ingest high-risk foods; most patients remember what they ingested. When the foreign body has sharp ends at one or both ends, the risk of perforation increases. The site of perforation occurs at points of narrowing or angulation in the GI tract, such as the cricopharyngeal ring, aortic arch, lower esophageal sphincter, pylorus, duodenal curve, ligament of Treitz, iliocecal valve, appendix, or the rectosigmoid junction.[14] Many case reports are of penetration into the pancreas, which suggests that the narrowing of the pylorus may be the mechanism by which foreign objects penetrate into the pancreas. There have been reports of foreign body

ingestion with subsequent removal through open techniques; however, only one other report exists of laparoscopic removal of a foreign body from the pancreas.[12]

Minimally invasive surgery has many advantages over traditional open procedures. The smaller abdominal incisions result in decreased risk of infection and dehiscence, less postoperative pain, and faster recovery time. Many abdominal and pelvic surgeries, such as adrenalectomies, colectomies, esophagectomies, and hysterectomies, are now being performed laparoscopically. Some argue that visualization for certain procedures, such as the Nissen fundoplication, is made easier with the laparoscopic technique. For removal of foreign bodies, the magnified view from the laparoscope aids in visualization of small structures, and the reflected light can aid in differentiation between metallic foreign bodies and the surrounding tissues. In our case, we were able to visualize and enter the lesser sac with careful dissection to locate and remove the wire in the pancreas. Since many foreign bodies migrate to the pancreas, a laparoscopic approach may be beneficial over open procedures because it allows the surgeon to approach the lesser sac with minimal manipulation of surrounding tissues while being aided by optimal magnification and illumination. Our successful laparoscopic retrieval of a pancreatic foreign body provides a basis for further innovative thinking for complicated surgical problems, and emphasizes the need to incorporate minimally invasive techniques into the practice of all surgeons.

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