

CASE REPORT

A Case of Fish Bone Perforation of the Stomach Mimicking a Locally Advanced Pancreatic Carcinoma

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KEY WORDS: fish bone; perforation; pancreatic mass; pancreatic carcinoma; pancreas.

Foreign body perforations of the gastrointestinal tract (GIT) are not rare. They may present as intra-abdominal abscesses, but the occurrence of an abscess in a solid organ such as the liver is extremely rare. This is the first reported case of a fish bone perforation of the GIT presenting as a pancreatic mass. The patient was afebrile, with a normal total white cell count. CT scan showed a large mass in the body of the pancreas invading into the posterior wall of the stomach with a “vessel” transversing it. The patient underwent subtotal pancreatectomy, partial gastrectomy, splenectomy, and segmental colectomy for what was thought to be a locally invasive pancreatic carcinoma. Final histological diagnosis was a sterile abscess secondary to fish bone perforation.

CASE REPORT

A 60-year-old female presented to the outpatient clinic with a 2-week history of epigastric discomfort. She was well, with no other abnormal symptoms or signs. The abdominal ultrasound showed an inhomogeneous $3.1 \times 2.3 \times 2.0$ -cm mass in the body of the pancreas and this was confirmed on CT scan, which revealed a 2.9×1.7 -cm, ill-defined, low-density mass in the body of the pancreas bulging anteriorly and abutting against the thickened posterior wall of the stomach. There was also a linear radiopaque structure transversing the center of the mass, which was thought to be a blood vessel (Figure 1). There were no evidence of liver metastases, intra-abdominal lymphadenopathy, or ascites. The patient was diagnosed with carcinoma of the pancreas with possible invasion into the stomach and underwent a

gastroscopy and biopsy which revealed inflammatory cells without evidence of malignancy in the thickened posterior wall. A mesenteric angiogram was performed to delineate the “vessel” transversing the tumor but it could not be visualized. Laboratory investigations revealed a normal total white count of $7000/\text{mm}^3$ and the CA 19-9 and CEA were within normal limits.

The patient underwent an elective exploratory laparotomy whereby a large, 3-cm mass in the body of the pancreas was found which invaded into the posterior wall of the stomach. There were also incidental gallstones. She had extensive surgery whereby a subtotal pancreatectomy (conserving the head and uncinata process), partial gastrectomy, splenectomy, and segmental colectomy (middle colic ligated to facilitate dissection) were performed. Histology revealed the mass to be a sterile abscess with no evidence of malignancy. A fish bone 2.8 cm long and 0.1 cm in diameter was found within the mass (Figure 2). The patient recovered uneventfully and was discharged well on the 11th postoperative day.

DISCUSSION

Foreign body ingestion is a common clinical problem, of which the fish bone is one of the most common. Most ingested foreign bodies pass through the gastrointestinal tract (GIT) uneventfully within 1 week (1, 2) and GIT perforation is very rare, occurring in less than 1% of patients (3–5). Foreign body perforation of the GIT may very rarely result in the migration of the object into a solid organ such as the liver, resulting in an abscess formation. The first case of hepatic abscess secondary to foreign body perforation was reported by Lambert in 1898 (6). Since then, several cases of hepatic abscesses secondary to sharp foreign bodies such as toothpicks, chicken bones, and, most commonly, fish bones have been reported in the English literature (5–14). To our knowledge this is the first reported case of a pancreatic mass secondary to foreign body perforation of the GIT with migration into the pancreas.

Manuscript received March 10, 2004; accepted May 25, 2004.

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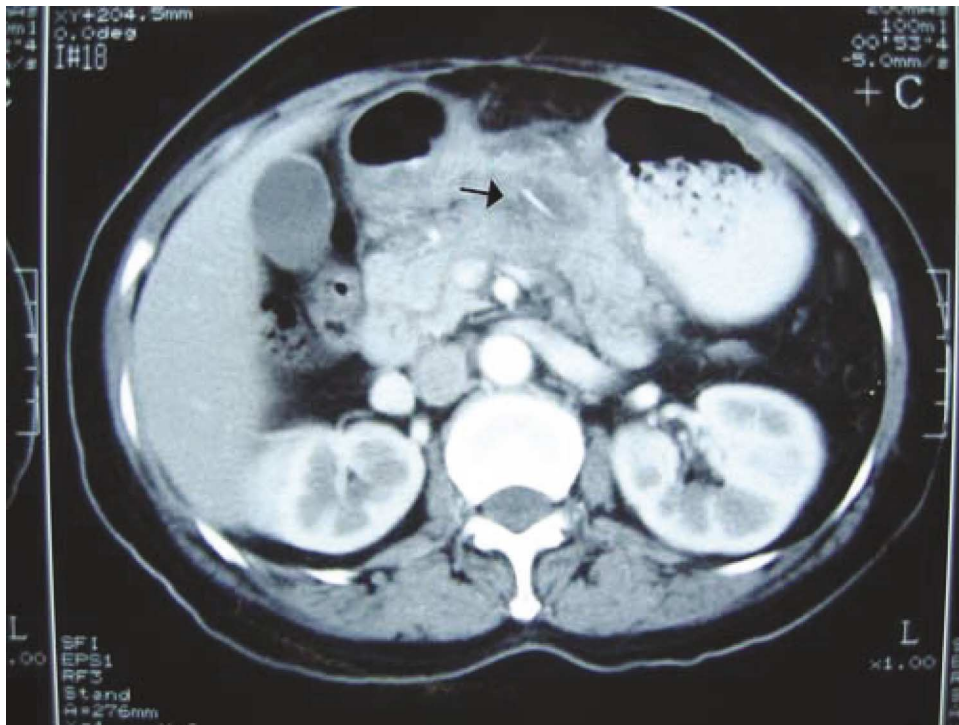


Fig 1. CT scan demonstrating the fish bone within the pancreatic abscess.

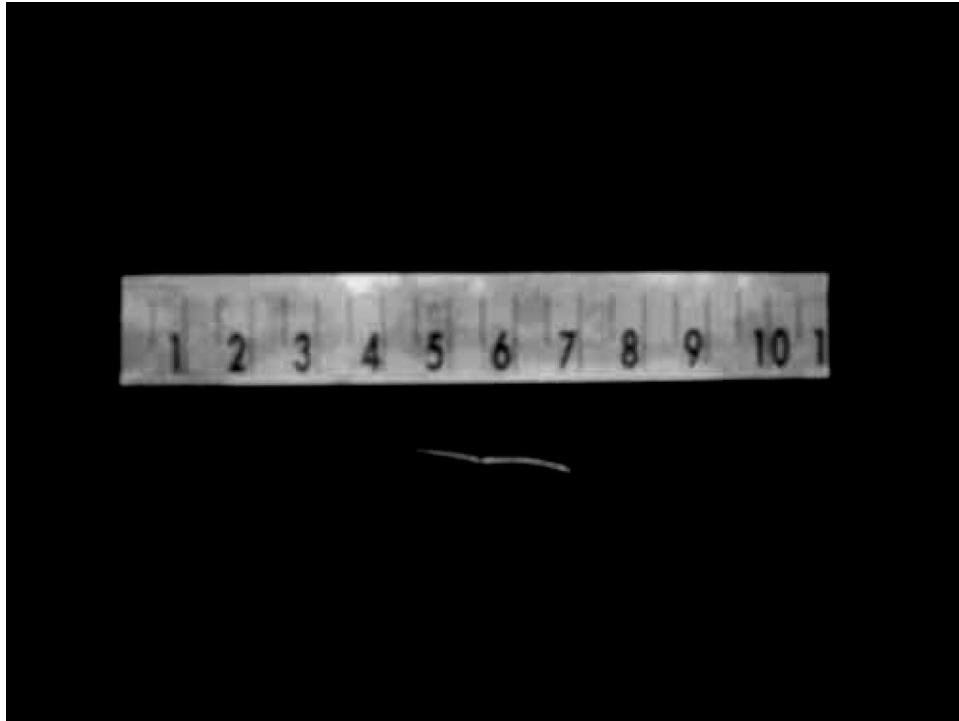


Fig 2. Gross specimen of the fish bone found in the resected pancreas.

We postulate that this patient ingested a fish bone which perforated the posterior wall of the stomach and migrated into the pancreatic body, resulting in a pancreatic abscess. In retrospect, the linear, radiopaque structure seen on CT scan was the fish bone and not a blood vessel. The diagnosis of foreign body perforation was not suspected in this patient for several reasons: (a) There was no history of foreign body ingestion, (b) the patient was afebrile, (c) the patient did not have an elevated total white cell count, and (d) pancreatic mass secondary to foreign body perforation was previously unheard of.

The preoperative diagnosis of foreign body perforation is often difficult, as frequently patients give no history of swallowing the foreign body or may remember the incident only after the diagnosis is made (5). This is especially so if the foreign body is commonly ingested and forgotten such as a fish or chicken bone. Furthermore, there may be a considerable time lag, of months or even years, between the time of ingestion and the onset of symptoms (5, 6).

The use of plain radiography to diagnose ingested fish bones is equally unreliable, as the degree of radiopacity of the bones depends on the species of fish (15, 16). This is contrary to chicken bones, which are almost always radiopaque. A prospective study of 358 patients with fish bone ingestion revealed that the plain radiograph had a sensitivity of only 32% (17). The CT scan has been shown to be more helpful in detecting ingested fish bones (13, 14). CT scan often reveals a linear calcified lesion corresponding to the bone. However, a high index of suspicion must be maintained for the correct diagnosis to be made, as the lesion can be mistaken for a blood vessel as in our patient.

In conclusion, this case demonstrates an unusual presentation of fish bone perforation of the GIT. It illustrates the difficulty in making the diagnosis unless a high index of suspicion is maintained. It also serves as a reminder to all medical practitioners that the diagnosis of a foreign body perforation should always be kept in mind whenever an intra-abdominal mass or abscess is encountered, even in the absence of fever and a raised total white cell count.

REFERENCES

1. Strauss JE, Balthazar EJ, Naidich DP: Jejunal perforation by a toothpick: CT demonstration. *J Comput Assist Tomogr* 9:812-814, 1985
2. McCanse DE, Kurchin A, Hinshaw JR: Gastrointestinal foreign bodies. *Am J Surg* 142:335-337, 1981
3. Maleki M, Evans WE: Foreign-body perforation of the intestinal tract. Report of 12 cases and review of the literature. *Arch Surg* 101:474-477, 1970
4. Gary JN, Raymond BK: Liver abscess following ingestion of a foreign body. *Pediatr Infect Dis* 3:342-344, 1984
5. Shaw PJ, Feeman JG: The antemortem diagnosis of pyogenic liver abscess due to perforation of the gut by a foreign body. *Postgrad Med J* 59:455-456, 1983
6. Lambert A: Abscess of the liver of unusual origin. *NY Med J* February:177-178, 1898
7. de la Vega M, Rivero JC, Ruiz, Suarez S: A fish bone in the liver. *Lancet* 358:982, 2001
8. Theodoropoulou A, Roussomoustakaki, Michalodimitrakis MN, Kanaki C, Kouroumalis EA: Fatal hepatic abscess caused by a fish bone. *Lancet* 359:977, 2002
9. Dugger K, Leby T, Brus M, Sahgal S, Leikin JB: Hepatic abscess resulting from gastric perforation of a foreign object. *Am J Emerg Med* 8:323-325, 1990
10. Horii K, Yamazaki O, Matsuyama M, Higaki I, Kawai S, Sakaue Y: Successful treatment of a hepatic abscess that formed secondary to fish bone penetration by percutaneous tranhepatic removal of the foreign body: report of a case. *Surg Today* 29:922-926, 1999
11. Chan SC, Chen HY, Ng SH, Lee CM, Tsai CH: Hepatic abscess due to gastric perforation by ingested fish bone demonstrated by computed tomography. *J Formos Med Assoc* 98:145-147, 1999
12. Tsai JL, Than MM, Wu CJ, Sue D, Keh CT, Wang CC: Liver abscess secondary to fish bone penetration of the gastric wall: a case report. *Zhonghua Yi Xue Za Zhi* 62:51-54, 1999
13. Masuanaga S, Abe M, Imura T, Asano M, Minami S, Fujisawa I: Hepatic abscess secondary to a fishbone penetrating the gastric wall: CT demonstration. *Comput Med Imaging Graph* 15:113-116, 1991
14. Gonzalez JG, Gonzalez RR, Patino JV: CT finding in gastrointestinal perforation by ingested fish bones. *J Comput Assist Tomogr* 12:88-90, 1988
15. Kumar M, Joseph G, Kumar S, Clayton M: Fish bone as a foreign body. *J Laryngol Otol* 112:360-364, 1998
16. Ell SR, Sprigg A: The radio-opacity of fishbone-species variation. *Clin Radiol* 44:104-107, 1991
17. Ngan JHK, Fok PJ, Lai ECS, Branicki FJ, Wong J: A prospective study on fish bone ingestion. Experience of 358 patients. *Ann Surg* 211(4):459-462, 1989