

# Transmural perforation by fish bone from stomach to liver

X Liu, J Shi \*

Hong Kong Med J 2022;28:182.e1-2

<https://doi.org/10.12809/hkmj219481>

A 46-year-old man was admitted to the emergency department with a 3-day history of epigastric abdominal pain associated with nausea. His temperature was 36.5°C, pulse 74 beats per minute and blood pressure 135/70 mm Hg. Physical examination revealed mild epigastric tenderness and rebound tenderness in the upper abdomen. Basic laboratory test results were normal. Abdominal computed tomography (CT) scan (Fig) revealed a radiodense linear foreign body measuring 3 cm, extending transmurally through the lesser curvature of the stomach and penetrating the liver capsule. Inflamed tissue surrounding the pylorus was also

noted. Pneumoperitoneum was evident as free gas under the diaphragm. The patient was kept nil by mouth and transferred for emergency laparoscopy. An oesophagogastroduodenoscopy was performed and a fish bone penetrating the stomach wall was found. Clipping was performed after fish bone removal. Empiric intravenous antibiotic (tazobactam 4 g/8 h) was prescribed before and after the oesophagogastroduodenoscopy. The patient made an uneventful recovery and was discharged home 6 days after surgery.

After ingestion, most fish bones pass through the gastrointestinal tract within a week and cause no

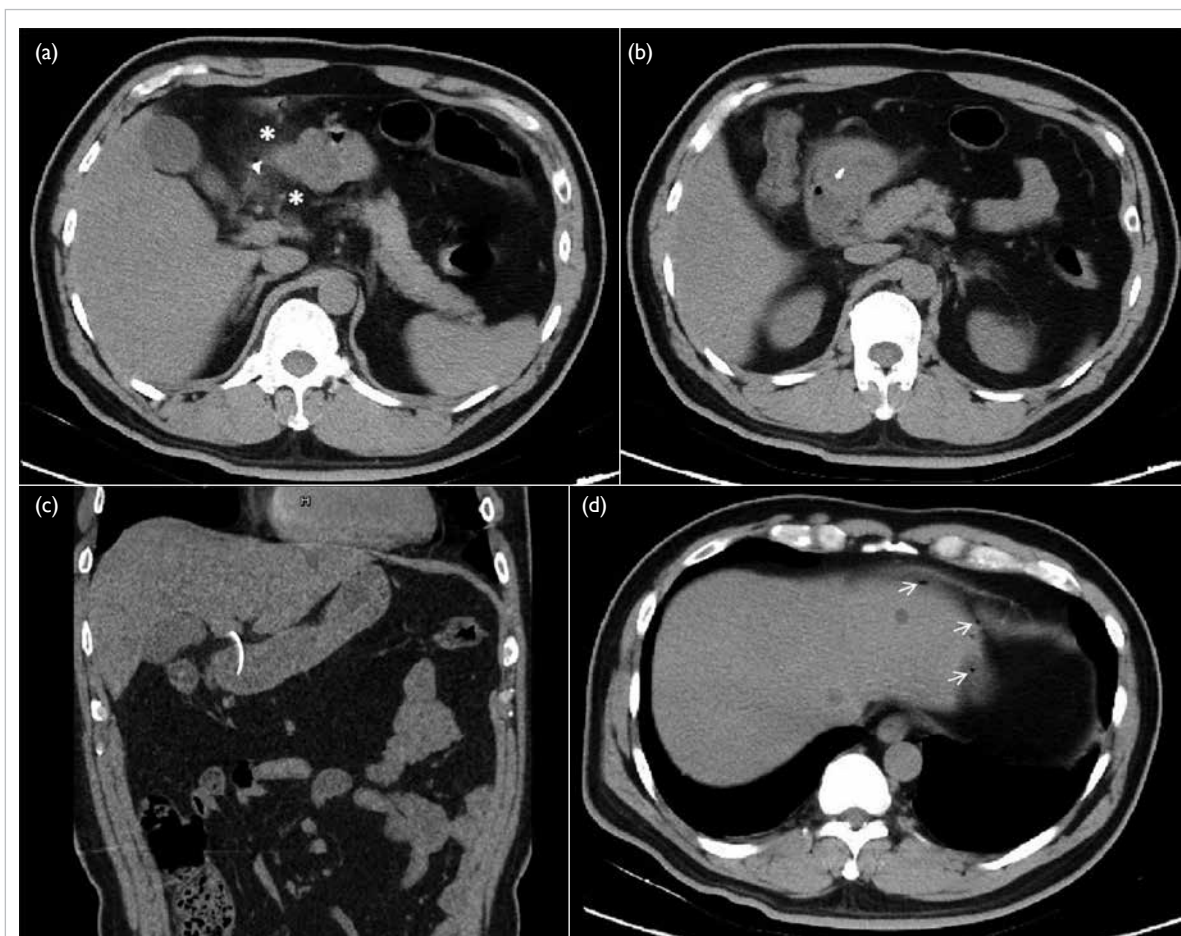


FIG. (a, b) Axial and (c) coronal computed tomography images showing a linear hyperdense structure, extending transmurally through the lesser curvature of the stomach and penetrating the liver capsule, local fat stranding was identified (asterisk). (d) Axial computed tomography image showing pneumoperitoneum, evident as free gas (arrows) under the diaphragm, suggesting the possibility of perforation

serious complications. Gastrointestinal perforation by fish bone is a rare medical emergency. Clinical symptoms are often atypical and may vary from mild to severe depending on the site of perforation and the degree of inflammation.<sup>1</sup> In addition to a non-specific clinical presentation, a history of foreign body ingestion is rarely available. The patient in this report was unaware of fish bone ingestion. Laboratory findings are also non-specific and usually demonstrate elevated inflammatory markers. Thus, a diagnosis of fish bone perforation can be challenging and is often delayed. The radiologist plays an essential role in the detection of fish bone perforation and associated complications.

Computed tomography is considered the most effective means by which to identify foreign bodies and their associated complications due to its high resolution and high-quality multiplanar capabilities.<sup>2</sup> The main imaging features of fish bone perforation on CT scan are a linear hyperdense structure in the gastrointestinal tract, inflammatory changes surrounding the perforation site, and pneumoperitoneum.<sup>2,3</sup> Pneumoperitoneum is a rare yet important finding that can signal the possibility of perforation. In our case, multiplanar CT reconstructions revealed that the fish bone had partially perforated the stomach wall into the adjacent hepatic parenchyma, causing perigastric inflammatory changes. In addition, pneumoperitoneum was identified under the diaphragm. This report provides a reference for clinicians. Early endoscopic or surgical removal of a foreign body from the stomach causing complications is recommended.

#### Author contributions

Concept or design: X Liu.

Acquisition of data: All authors.

Analysis or interpretation of data: All authors.

Drafting of the manuscript: All authors.

Critical revision of the manuscript for important intellectual content: All authors.

All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

#### Conflicts of interest

The authors declared no potential conflicts of interest.

#### Funding/support

This study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

#### Ethics approval

This study was approved by the Hospital of Chengdu University of Traditional Chinese Medicine Research Ethics Committee (Ref: 2021524). Informed consent was obtained from the patient.

<sup>1</sup> X Liu, MD

<sup>2</sup> J Shi \*, MD

<sup>1</sup> Department of Radiology, Hospital of Chengdu University of Traditional Chinese Medicine, Chengdu, China

<sup>2</sup> Department of Nursing, Hospital of Chengdu University of Traditional Chinese Medicine, Chengdu, China

\* Corresponding author: 267126966@qq.com

#### References

1. Yi L, Cheng Z, Zhou Y, et al. Fishbone foreign body ingestion in duodenal papilla: a cause of abdominal pain resembling gastric ulcer. *BMC Gastroenterol* 2020;20:323.
2. Paixão TS, Leão RV, de Souza Maciel Rocha Horvat N, et al. Abdominal manifestations of fishbone perforation: a pictorial essay. *Abdom Radiol (NY)* 2017;42:1087-95.
3. Davarpanah AH, Eberhardt LW. Case 282: fishbone pylephlebitis. *Radiology* 2020;297:239-43.