Intestinal perforation due to fish bone diagnosed preoperatively by computed tomography

Yoshimasa Kishi, Atsuyoshi Iida, Kohei Tsukahara, Atsunori Nakao

ABSTRACT

Abstract is not required for Clinical Images

International Journal of Case Reports and Images (IJCRI)

International Journal of Case Reports and Images (IJCRI) is an international, peer reviewed, monthly, open access, online journal, publishing high-quality, articles in all areas of basic medical sciences and clinical specialties.

Aim of IJCRI is to encourage the publication of new information by providing a platform for reporting of unique, unusual and rare cases which enhance understanding of disease process, its diagnosis, management and clinico-pathologic correlations.

IJCRI publishes Review Articles, Case Series, Case Reports, Case in Images, Clinical Images and Letters to Editor.

Website: www.ijcasereportsandimages.com

CLINICAL IMAGE

PEER REVIEWED | OPEN ACCESS

Intestinal perforation due to fish bone diagnosed preoperatively by computed tomography

Yoshimasa Kishi, Atsuyoshi Iida, Kohei Tsukahara, Atsunori Nakao

CASE REPORT

A 73-year-old female was presented to emergency department with a one-day history of increasing lower abdominal pain. The patient had attended a wedding party of her grandson and ate baked red snapper. Her past medical history was unremarkable and she was taking medication for hypertension. Her vital signs included blood pressure 119/66 mmHg, pulse rate 80 beats/min, and body temperature 36.2°C. On examination, the patient had a slightly distended abdomen with significant right iliac fossa guarding and tenderness. Her white cell count and C-reactive protein levels were 11900/mm³ and 1.24 mg/dL, respectively, indicating systemic inflammation. Abdominal computed tomography demonstrated pneumoperitoneum and fluid within the abdominal cavity, as well as dilated intestine, suggesting diffuse peritonitis due to alimentary tract perforation (Figures 1 and 2). Under general anesthesia, the patient underwent diagnostic/therapeutic laparoscopy, which showed acutely inflamed ileum and purulent ascites. A foreign body, assumed to be a fish bone, was observed piercing through the small bowel wall at the ileum. As the site of perforation was not clearly determined via

laparoscope, a lower median laparotomy was performed. Lavage of the abdominal cavity enabled us to detect a 2-mm ileal perforation by foreign body by confirming bubble from the perforation. Diffuse purulent peritonitis was evident in an area with adhesions. The foreign body was removed, primary suture of the intestinal perforation was performed, and the abdominal cavity was drained. Intravenous antibiotics were administered. The patient was discharged on day-5 after admission without complications.

Figure 1: Plain abdominal computed tomography showing thickened intestinal segment, localized pneumoperitoneum. Linear density crossing the intestinal wall was noted (black arrow).

Yoshimasa Kishi¹, Atsuyoshi Iida¹, Kohei Tsukahara¹, Atsunori Nakao¹

Affiliation: ¹MD, Department of Emergency and Critical Care Medicine, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Okayama, Okayama, Japan.

Corresponding Author: Atsunori Nakao, MD, PhD, Department of Emergency and Critical Care Medicine, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, 2-5-1 Shikata-cho, Kita-ku, Okayama-shi, Okayama, Japan, 700-8558; Email: qq-nakao@okayama-u.ac.jp

Received: 29 January 2017

Accepted: 06 April 2017

Published: 01 October 2017

Figure 2: Unenhanced abdominal computed tomography scan showing a fish bone (white arrowhead) as a linear radiopaque density penetrating the intestinal wall with adjacent areas of inflammation.

DISCUSSION

Ingestion of foreign bodies is a common clinical problem encountered in emergency departments. Meat boluses are the most common foreign bodies ingested in Western countries, while fish bones are the most common in Oriental countries where unfileted fish is a culinary delicacy [1, 2]. Although most fish bones pass through the gastrointestinal tract without complications, patients who accidentally ingest a fish bone are occasionally asymptomatic after ingestion initially, but may at a later date present remotely with serious complications such as perforation, obstruction, and abscess formation in the gastrointestinal tract. In fact, fish bones are the most common objects ingested and the most common foreign body to perforate the gastrointestinal tract [3]. Fish bones can perforate all segments of the alimentary tract. However, perforation tends to occur in areas of acute angulation such as the rectosigmoid and ileocecal junctions [4]. Early laparoscopic or surgical removal of the fish bone and abdominal lavage is recommended [5]. Eventually, as with our patient, determining the perforation site on laparotomy is difficult. Careful observation and administration of antibiotics are

absolutely required for the treatment of intestinal perforation by fish bone.

Diagnosis of foreign body perforation of the gastrointestinal tract can be challenging and is rarely correctly diagnosed preoperatively. Radiography is unreliable in the diagnosis of fish bone perforation. Computed tomography (CT) scan has been helpful in the detection of nonmetallic foreign body perforation. Fish bone perforation typically appears as a linear calcified lesion surrounded by an inflamed area on CT scan [6]. Evidence of pneumoperitoneum is only seen in approximately 30% of patients with intestinal perforation caused by fish bone ingestion [1]. Computed tomography scan sensitivity for detection of fish bone peritonitis is known to be relatively high (71–100%). Since the main reason for missed diagnosis is the observer's lack of awareness, a high degree of clinical suspicion should be maintained in order to make a correct diagnosis.

CONCLUSION

We described a case of acute peritonitis after perforation of the ileum by a fish bone that was detected by computed tomography. We emphasize the value of CT in diagnosing fish bone peritonitis; familiarity with its appearance on CT scan can help to detect fish bone perforation along with any associated complications and help guide further management.

Keywords: Foreign body, Peritonitis, Sea food

How to cite this article

Kishi Y, Iida A, Tsukahara K, Nakao A. Intestinal perforation due to fish bone diagnosed preoperatively by computed tomography. *Int J Case Rep Images* 2017;8(10):678–680.

Article ID: Z01201710CL10134YK

doi:10.5348/ijcri-201724-CL-10134

Acknowledgements

We thank Christine Heiner for editing the manuscript.

Author Contributions

Yoshimasa Kishi – Substantial contributions to conception and design, Acquisition of data, Analysis and

interpretation of data, Drafting the article, Final approval of the version to be published

Atsuyoshi Iida – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Kohei Tsukahara – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Atsunori Nakao – Substantial contributions to conception and design, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2017 Yoshimasa Kishi et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited.

Please see the copyright policy on the journal website for more information.

REFERENCES

1. Rodríguez-Hermosa JI, Codina-Cazador A, Sirvent JM, Martín A, Gironès J, Garsot E. Surgically treated perforations of the gastrointestinal tract caused by ingested foreign bodies. *Colorectal Dis* 2008 Sep;10(7):701–7.
2. Mutlu A, Uysal E, Ulusoy L, Duran C, Selamoglu D. A fish bone causing ileal perforation in the terminal ileum. *Ulus Travma Acil Cerrahi Derg* 2012 Jan;18(1):89–91.
3. Goh BK, Tan YM, Lin SE, et al. CT in the preoperative diagnosis of fish bone perforation of the gastrointestinal tract. *AJR Am J Roentgenol* 2006 Sep;187(3):710–4.
4. Pinero Madrona A, Fernández Hernández JA, Carrasco Prats M, Riquelme Riquelme J, Parrila Paricio P. Intestinal perforation by foreign bodies. *Eur J Surg* 2000 Apr;166(4):307–9.
5. Velitchkov NG, Grigorov GI, Losanoff JE, Kjossev KT. Ingested foreign bodies of the gastrointestinal tract: Retrospective analysis of 542 cases. *World J Surg* 1996 Oct;20(8):1001–5.
6. Venkatesh SH, Venkatanarasimha Karaddi NK. CT findings of accidental fish bone ingestion and its complications. *Diagn Interv Radiol* 2016 Mar–Apr;22(2):156–60.

Access full text article on
other devices

Access PDF of article on
other devices

Edorium Journals: An introduction

About Edorium Journals

Edorium Journals is a publisher of international, high-quality, open access, scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission

We sincerely invite you to submit your valuable research for publication to Edorium Journals.

Why should you publish with Edorium Journals?

In less than 10 words: "We give you what no one does".

Vision of being the best

We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day.

Exceptional services

We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial review

All manuscripts submitted to Edorium Journals undergo pre-processing review followed by multiple rounds of stringent editorial reviews.

Peer review

All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early view version

Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status

From submission to publication of your article you will get regular updates about status of your manuscripts.

Our Commitment

Six weeks

We give you our commitment that you will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this commitment by even one day, we will give you a 75% Discount Voucher for your next manuscript.

Four weeks

We give you our commitment that after we receive your page proofs, your manuscript will be published in the journal within 14 days (2 weeks). If we fail to honor this commitment by even one day, we will give you a 75% Discount Voucher for your next manuscript.

Favored author program

One email is all it takes to become our favored author. You will not only get 15% off on all manuscript but also get information and insights about scholarly publishing.

Institutional membership program

Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in publication fees.

Our presence

We have high quality, attractive and easy to read publication format. Our websites are very user friendly and enable you to use the services easily with no hassle.

Something more...

We request you to have a look at our website to know more about us and our services. Please visit:
www.edoriumjournals.com

We welcome you to interact with us, share with us, join us and of course publish with us.

Edorium Journals: On Web

Browse Journals

CONNECT WITH US