



Perforation of Gallbladder Due to Ingested Foreign Body (Unabsorbed Pill) in a Case of Cholecystoduodenal Fistula: A Case Report

Amritanshu Saurabh^{1*}, Rohit Chauhan¹, Tayod Kumar Choudhary¹ and Prashant Deo Ranjan¹

¹*Department of Surgery, Atal Bihari Vajpayee Institute of Medical Sciences, Dr RML Hospital, New Delhi, India.*

Authors' contributions

This work was carried out in collaboration among all authors. Author AS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AS and RC are the operating surgeons. Authors RC and TKC managed the analyses of the study. Author PDR managed the literature searches. All authors read and approved the final manuscript.

Article Information

Editor(s):

(1) Dr. Luis Ricardo Martinhao Souto, Universidade de Marília (UNIMAR), Brazil.

Reviewers:

(1) Muhammad Asif Mangi, University of Toledo, USA.

(2) Ali Bendjaballah, University of Algiers, Algeria.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/57700>

Case Report

Received 25 March 2020

Accepted 31 May 2020

Published 06 June 2020

ABSTRACT

Gallbladder perforation is a rare but serious complication of cholecystitis. Presence of foreign body in gallbladder is also an extremely rare condition. Here, we report a case of gallbladder perforation due to ingestion of foreign body (unabsorbed pill) in a case of asymptomatic cholecystoduodenal fistula. Few ingested pills passed through gastrointestinal tract but one pill entered in the gallbladder lumen through a cholecystoduodenal fistula. The undigested pill was lodged in the lumen of gallbladder at its fundus and eroded the wall of gallbladder and caused perforation at the fundus of gallbladder. As per knowledge, there are very few cases reported in which most of the ingested foreign body were sharp and penetrating which caused gallbladder perforation. No case of undigested pill in the gallbladder lumen which caused serious complication like perforation has been reported till date.

*Corresponding author: E-mail: amritanshusaurabh@gmail.com;

Keywords: Gallbladder perforation; foreign body; undigested pill; cholecystoduodenal fistula.

1. INTRODUCTION

Ingestion of foreign body is rare in adults as compared to children [1,2]. In adult, foreign body ingestion can be intentional or unintentional, more common in elderly people, psychiatric patients or purposeful body packers. Rarely, foreign body impaction occurs as a complication of pill ingestion [3,4]. In adults, foreign body impactions are mostly seen in the context of a pre-existing pathology. Most of the ingested foreign body pass through the intestinal tract without complication. After swallowing, foreign bodies can migrate to any gastrointestinal tract organ, but perforation of bowel is rare and migration to the gallbladder is extremely rare. Here, we report a case of gallbladder perforation due to ingestion of undigested pill that may have migrated through the cholecystoduodenal fistula into the gallbladder. The pill impacted and eroded the wall of gallbladder and caused perforation at its fundus.

2. CASE REPORT

A 62-year-old woman presented to the emergency department with complaints of right hypochondrium pain and fever for 1 week. She had taken antacid pills 3 weeks prior to admission. On physical examination, tachycardia was present and the patient was febrile. Abdominal examination revealed tenderness in

the right hypochondrium. Laboratory investigations showed leukocytosis (14500/ μ L). X-ray abdomen was unremarkably normal. Ultrasonography was done, which was suggestive of inflammation of gallbladder, with an echogenic focus associated with acoustic shadowing (which was later intra operatively confirmed as foreign body). Patient was initially managed conservatively but sign and symptoms did not improve with intravenous medications. Contrast enhanced computed tomography (Fig. 1) showed a cholecystoduodenal fistula, with a large foreign body and air-foci within the gall bladder lumen. Few foreign bodies were also visible in the bowel (Fig. 2). Intra-operatively, there was a perforation at fundus of gallbladder with undigested pill inside its lumen (Fig. 3). The gallbladder was inflamed and minimal adhesions were present with surrounding structures. A fistulous tract was also found in between gallbladder and first part of duodenum (Fig. 4). Few foreign bodies were also felt in the small intestine. As they were not obstructing the lumen, they were carefully passed beyond the ileo-caecal valve. Cholecystectomy with fistula take-down and repair of duodenum was done. A sub-hepatic drain was placed. The undigested pill was sent for chemical analysis (Fig. 5). The post-operative period was uneventful; the drain was removed on post-operative day three in view of decreased output (< 30 ml).

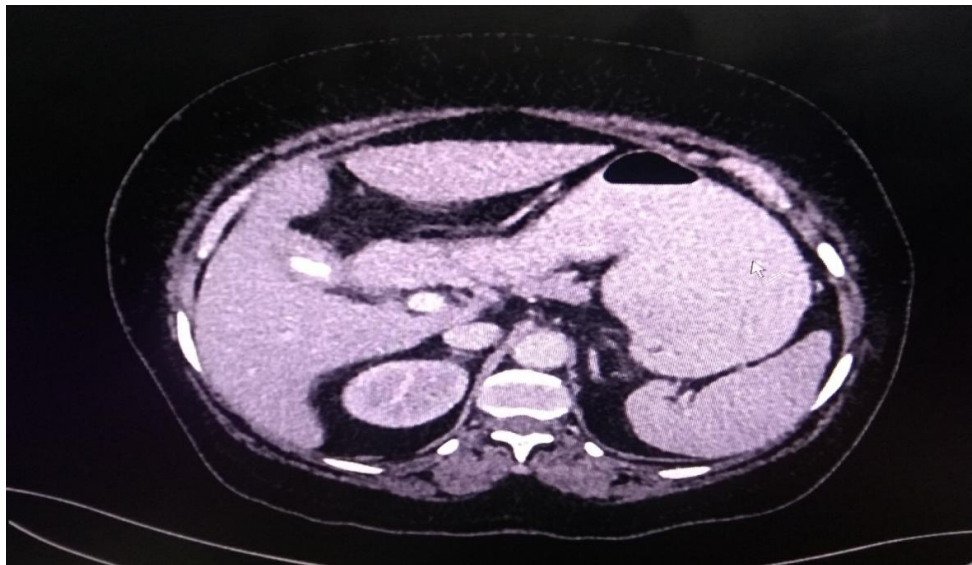


Fig. 1. Computed tomography shows foreign body in gallbladder with air-foci and cholecystoduodenal fistula



Fig. 2. Foreign body (undigested pill) in the lumen of bowel



Fig. 3. Gallbladder perforation with foreign body in its lumen

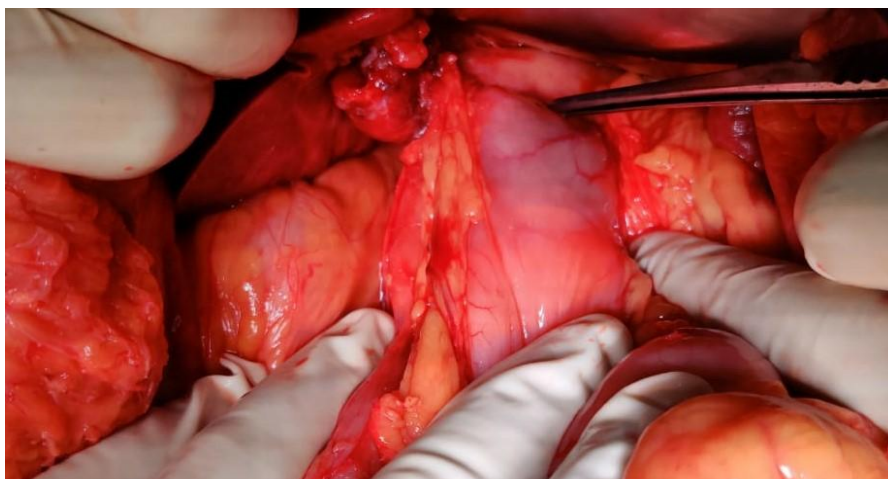


Fig. 4. Cholecystoduodenal fistula



Fig. 5. Undigested pill

3. DISCUSSION

Most frequently, fistula occurs between the gallbladder and the duodenum, due to their proximity [5,6,7]. This process might be part of the natural history of Mirizzi syndrome. The gallbladder perforation was first classified by Neimeier in three types- type 1—free perforation, type 2—perforation with abscess, and type 3—chronic perforation with cholecysto-enteric fistula. This classification was modified by Anderson et al. [8] to include cholecystobiliary fistula formation as type 4. Any ingested foreign body passes through intestinal tract in most of the cases without any complication. After swallowing foreign bodies can migrate to any gastrointestinal organ, but perforation of bowel is rare and migration to the gallbladder is extremely rare. Only in 20% of cases, endoscopic intervention is indicated. Surgical intervention is indicated in less than 1% of cases [9-14].

In adults, foreign body impaction is mostly seen in the context of a pre-existing pathology.

According to the available data, frequencies of swallowed foreign bodies vary widely. The foreign bodies most commonly swallowed by adults are [10,12,13]: a) Fish bones (9–45%), Bones (8–40%) and Dentures (4–18%). The perforation of the luminal organs of the abdomen mostly ends up with peritonitis and acute abdomen, necessitating urgent surgical intervention. There are only a few cases reported till date, and in most of them the ingested foreign body was sharp and penetrating which caused gallbladder perforation. M Kunizaki et al. [15] reported a case of cholecystitis due to a fish bone that may have penetrated through the

stomach wall and into the gallbladder without causing peritonitis. Laparoscopic cholecystectomy was performed for cholecystitis. S Karacay et al. [16] reported a case of stomach and gallbladder perforation due to ingestion of sewing pin which needed emergency laparotomy and repair of stomach perforation with cholecystectomy. Few authors also reported a case of duodenal perforation due to ingestion of toothpick. In our case, most of the ingested foreign bodies (unabsorbed pills) passed through intestinal tract without any complication but one pill entered into gallbladder through cholecystoduodenal fistula which caused severe inflammation of gallbladder wall and perforation at its fundus, which further led to peritonitis.

Exploratory laparotomy is the preferred management in patients with peritonitis due to foreign body [17,18]. In our case also patient underwent laparotomy – cholecystectomy with fistula take-down and repair of duodenum was done. Recently, few cases have been reported where foreign body has been retrieved by laparoscopic or laparoscopic assisted approach [19]. Decision for open or laparoscopic approach should be taken on case by case basis.

4. CONCLUSION

The presence of a foreign body in the gallbladder is extremely rare. Clinicians dealing with atypical presentation of gallbladder perforation in elderly patients, should keep this rare possibility among the differential diagnosis.

CONSENT

Informed consent was taken from patient.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Seo JK. Endoscopic management of gastrointestinal foreign bodies in children. *Indian J. Pediatr.* 1999;66(1 Suppl):S75-S80.
2. Schunk JE, Harrison AM, Corneli HM, Nixon GW. Fluoroscopic foley catheter removal of esophageal foreign bodies in children: Experience with 415 episodes. *Pediatrics.* 1994;94:709.
3. Vizcarrondo FJ, Brady PG, Nord HJ. Foreign bodies of the upper gastrointestinal tract. *Gastrointest Endosc.* 1983;29:208.
4. Wisniewski RM, Stone DD, Fang JC. An esophageal foreign body impaction from a Tums E-X tablet. *Gastrointest Endosc.* 1997;45:518.
5. Nakao A, Okamoto Y, Sunami M, Fujita T, Tsuji T. The oldest patient with gallstone ileus: Report of a case and review of 176 cases in Japan. *Kurume Med J.* 2008;55:29-33.
6. Ayantunde AA, Agrawal A. Gallstone ileus: Diagnosis and management. *World J. Surg.* 2007;31:1292-1297.
7. Masannat Y, Masannat Y, Shatnawei A. Gallstone ileus: A review. *Mt Sinai J. Med.* 2006;73:1132-1134.
8. Anderson BB, Nazem A. Perforations of the gallbladder and cholecystobiliary fistulae: A review of management and a new classification. *J Natl Med Assoc.* 1987;79:393-399.
9. Webb WA. Management of foreign bodies of the upper gastrointestinal tract: Update. *Gastrointest Endosc.* 1995;41:39-51.
10. Sung SH, Jeon SW, Son HS, et al. Factors predictive of risk for complications in patients with oesophageal foreign bodies. *Dig Liver Dis.* 2011;43:632-635.
11. Ginsberg GG. Management of ingested foreign objects and food bolus impactions. *Gastrointest Endosc.* 1995;41:33-38.
12. Chiu YH, Hou SK, Chen SC, et al. Diagnosis and endoscopic management of upper gastrointestinal foreign bodies. *Am J Med Sci.* 2012;343:192-195.
13. Peng A, Li Y, Xiao Z, Wu W. Study of clinical treatment of esophageal foreign body-induced esophageal perforation with lethal complications. *Eur Arch Otorhinolaryngol.* 2012;269:2027-2036.
14. Ikenberry SO, Jue TL, Anderson MA, et al. Management of ingested foreign bodies and food impactions. *Gastrointest Endosc.* 2011;73:1085-1091.
15. Kunizaki M, Kusano H, Azuma K, et al. Cholecystitis caused by a fish bone. *Am J Surg.* 2009;198(2):e20-e22.
16. Safak Karacay, Koray Topçu, Selami Sözübir. A rare complication of an ingested foreign body: Gallbladder perforation. *Case Rep Gastrointest Med.* 2013;672572.
17. Chintamani, Singhal V, Lubhana P, Durkhere R, Bhandari S. Liver abscess secondary to a broken needle migration-a case report. *BMC Surg.* 2003;3:8.
18. Sarmast AH, Showkat HI, Patloo AM, Parray FQ, Lone R, Wani KA. Gastrointestinal tract perforations due to ingested foreign bodies; a review of 21 cases. *BMJP.* 2012;5(3):a529.
19. Law WL, Lo CY. Fishbone perforation of the small bowel: Laparoscopic diagnosis and laparoscopically assisted management. *Surg Laparosc Endosc Percutan Tech.* 2003;13(6):392-393.

© 2020 Saurabh et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/57700>