

## An abdominal surprise – A case report

Gaurang Charan Das<sup>1</sup>, Anupam Lahiri<sup>2</sup>

From <sup>1</sup>Chief Surgeon and Endoscopist, <sup>2</sup>Resident, Department of General Surgery, Central Hospital, South Eastern Railway, Kolkata, West Bengal, India

### ABSTRACT

Peritoneal loose bodies (PLBs), also known as peritoneal mice, are rare entity that is basically calcified pieces of necrotic tissue found in the peritoneal cavity. They are thought to evolve from torsion and separation of the appendices epiploicae, which are susceptible to such a process due to their narrow pedicle. We report the case of a 52-year-old male diagnosed as a case of chronic calculous cholecystitis. Workup investigations revealed nothing untoward other than gall stones. The patient was planned for laparoscopic cholecystectomy. Intraoperatively, a solitary smooth 6 cm × 6 cm spherical mass was found in the pelvic cavity not attached to any viscera or abdominal wall. The mass was diagnosed as a PLB. Such an entity is quite rare in medical literature and thus was sought for reporting.

**Key words:** Peritoneal boiled egg, Peritoneal loose body, Peritoneal mouse

Peritoneal loose bodies (PLBs) or “peritoneal mice” are asymptomatic incidentalomas found during abdominal surgery or autopsy [1]. They usually range from 0.5 to 2.5 cm in diameter. Giant peritoneal mice (>5 cm) can be associated with various symptoms due to a mass effect. They are thought to evolve from torsion and separation of the appendices epiploicae. An alternative theory suggests that loose bodies can be formed by the accumulation of peritoneal serum in the appendices epiploicae [2]. Herein, we discuss a giant peritoneal mouse that was asymptomatic and escaped detection on imaging. It surprised us all intraoperatively during laparoscopic cholecystectomy.

### CASE REPORT

A 52-years-old male presented to our hospital with complaints of on and off moderate-intensity intermittent pain in the right upper abdomen for 1 week. There were associated episodes of fever which were relieved on medication. There was no history of jaundice. There were no addictions or allergies. Bowel and bladder habits were normal. There was no history of any previous abdominal surgeries.

The general survey revealed no abnormalities with normal vitals. Abdominal examination revealed tenderness in the right hypochondrium with no organomegaly. Rest of the abdomen was normal. Other systemic examinations were normal.


Biochemical investigations revealed no abnormalities as such. All were within their respective normal ranges. Hemoglobin was 12 g%, and total leukocyte count was 9000/mm<sup>3</sup> with a normal differential count. Platelets were 3.2 lakh/mm<sup>3</sup>. Fasting and postprandial blood sugar levels were 110 mg/dl and 143 mg/dl, respectively. Serum urea was 38 mg/dl and serum creatinine was 0.8 mg/dl. Serum electrolytes were normal. Total bilirubin was 1 mg/dl. Serum albumin was 4 g/dl. Serum glutamic pyruvic transaminase was 45 U/l while serum glutamic oxaloacetic transaminase was 56 U/l. Serum alkaline phosphatase was 72 U/L. Serum cholesterol was 198 mg/dl and serum triglycerides were 165 mg/dl.

Ultrasound of the abdomen revealed a distended gall bladder with thick walls containing multiple gall stones. The common bile duct was 6 mm in size. There were no other abnormalities. Chest X-ray showed no abnormalities. The patient was diagnosed as a case of multiple gall stone disease with chronic cholecystitis and was prepared for laparoscopic cholecystectomy after anesthesia and cardiovascular fitness.

Intraoperatively, it was surprising to note a 6 cm × 6 cm solitary spherical shaped mass in the pelvic cavity. It was smooth in nature, cream-colored and was firm in consistency. It was not attached to any viscera or to the abdominal wall (Fig. 1). The cholecystectomy was carried out in a conventional fashion without any complications. The mass was removed through a separate small Pfannenstiel incision (Fig. 2a). The bisected specimen appeared as in Fig. 2b.

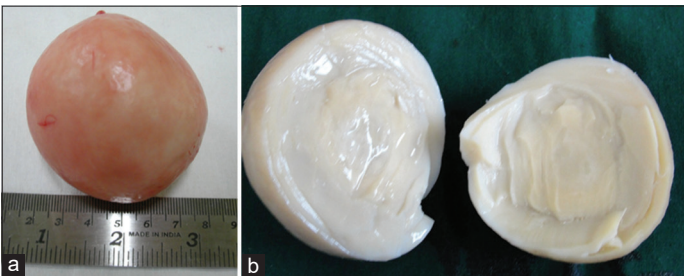
**Correspondence to:** Dr Anupam Lahiri, Unit – 9, 4<sup>th</sup> Floor, Building 11/1, North Colony, South Eastern Railway Headquarters, Garden Reach, Kolkata - 700 043, West Bengal, India. E-mail: anupamlahiri9@gmail.com

© 2020 Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC-ND 4.0).

| Access this article online                                                                     |                                                                                                            |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Received - 18 December 2020<br>Initial Review - 08 January 2021<br>Accepted - 01 February 2021 | Quick Response code<br> |
| DOI: 10.32677/IJCR.2021.v07.i01.012                                                            |                                                                                                            |



**Figure 1:** Intraoperative laparoscopic view



**Figure 2:** Post-operative (a) surgical specimen and (b) bisected specimen

The post-operative period was uneventful and the patient was discharged after 2 days. Histopathological examination revealed peripheral fat necrosis and calcification with central infarction of adipose tissue. There was peripheral inflamed fibrotic tissue. All these were diagnostic of a PLB, also known as peritoneal “mouse.”

## DISCUSSION

Giant PLBs are rare with only few case reports present in the literature. The first case of PLB was reported by Littre in 1703. Virchow in 1863 described a case of PLB and he proposed from his observations that obesity or infection can lead to an increase in the amount of fat deposited in the appendices epiploicae. This fat undergoes saponification and calcification, leads to gradual and progressive obstruction of the blood vessels of the pedicle. When the vascular obstruction is complete, necrosis of base occurs and appendix epiploicae falls into the peritoneal cavity [3].

Although many possible etiologic factors have been proposed to explain the appearance of PLBs, it is widely believed that the most common cause of PLB is the chronic torsion of the epiploic appendix [4,5]. The appendix may be attached by a thin pedicle that undergoes torsion, leading to infarction, or aseptic fat necrosis. Thereafter, saponification and calcification of the fatty contents occur and the pedicle then atrophies. The epiploic appendix finally detaches from the colon and becomes a PLB. Over the years, the PLB becomes enlarged due to peritoneal reactions to this freely moving epiploic appendix as well as the

depositions of peritoneal serum on it. The center of the PLB thus contains necrotic fatty tissue with outer concentric zones of microcalcification surrounded by densely laminated, hyalinized, and acellular fibrous tissue [2]. They usually range from 0.5 to 2.5 cm in diameter. Giant peritoneal mice (>5 cm) can be associated with symptoms due to a mass effect. But such may not always be the case as huge peritoneal bodies have also been reported [6].

Pre-operative diagnosis of these lesions is difficult because most of the time, these lesions are asymptomatic and found during routine exploration of the abdomen for some other pathology [7]. Only one such case has been reported in infants [8], signifying the rarity. The most common form of presentation in symptomatic patients is causing intestinal obstruction, as in this case. If a patient presents with features of intestinal obstruction and X-ray films show a calcified lesion in the abdomen, which moves with a change in position of the patient, there should be a high index of suspicion for the diagnosis of a giant loose peritoneal body. Some patients may present with pain in flanks with urinary symptoms as seen in the report by Obaid and Gehani [9]. Additional tests that can be done to diagnose peritoneal mice are computed tomography and magnetic resonance imaging scans, which can be useful for differentiating these from other lesions [7]. The possible differential diagnosis of this condition on imaging may be calcified leiomyoma, fibromata, desmoid tumor, teratomas, metastatic ovarian tumors, calcified lymph node, or calcified mesenteric cysts [10].

The only possible treatment, if at all required, is surgical removal. Considering the nature of the lesion, no specific treatment is required in asymptomatic patients. However, if there is a pelvic mass of obscure origin, or if it becomes associated with alimentary or urinary symptoms due to its large size, surgical exploration, and removal may be recommended [2].

## CONCLUSION

PLBs are rare entities and are rarely diagnosed preoperatively. Diagnosis should be considered in cases where imaging modalities show mobile pelvic masses, with central calcifications and well-preserved fat planes all around, although sometimes imaging may not be able to pick these up. When the diagnosis is in doubt, diagnostic laparoscopy can be performed and symptomatic PLBs can be removed with smaller incisions with minimal morbidity.

## REFERENCES

1. Koga K, Hiroi H, Osuga Y, Nagai M, Yano T, Taketani Y. Autoamputated adnexa presents as a peritoneal loose body. *Fertil Steril* 2010;93:967-8.
2. Mohri T, Kato T, Suzuki H. A giant peritoneal loose body: Report of a case. *Am Surg* 2007;73:895-6.
3. Harrigan AH. Torsion and inflammation of the appendices epiploicae. *Ann Surg* 1917;66:467-78.
4. Desai HP, Tripodi J, Gold BM, Burakoff R. Infarction of an epiploic appendage. Review of the literature. *J Clin Gastroenterol* 1993;16:323-5.
5. Ghahremani GG, White EM, Hoff FL, Gore RM, Miller JW, Christ ML. Appendices epiploicae of the colon: Radiologic and pathologic features. *Radiographics* 1992;12:59-77.

6. Kim HS, Sung JY, Park WS, Kim YW. Agiant peritoneal loose body. Korean J Pathol 2013;47:378-82.
7. Sewkani A, Jain A, Maudar K, Varshney S. 'Boiled egg' in the peritoneal cavity-a giant peritoneal loose body in a 64-year-old man: A case report. J Med Case Rep 2011;5:297.
8. Asabe K, Maekawa T, Yamashita Y, Shirakusa T. Endoscopic extraction of a peritoneal loose body: A case report of an infant. Pediatr Surg Int 2005;21:388-9.
9. Obaid M, Gehani S. Deciding to remove or leave a peritoneal loose body: A case report and review of literature. Am J Case Rep 2018;19:854-7.
10. Nomura H, Hata F, Yasoshima T, Kuwahara S, Naohara T, Hidefumi N, *et al.* Giant peritoneal loose body in the pelvic cavity: Report of a case. Surg Today 2003;33:791-3.

*Funding: None; Conflicts of Interest: None Stated.*

**How to cite this article:** Das GC, Lahiri A. An abdominal surprise – A case report. Indian J Case Reports. 2021;7(1):37-39.