

Case Report

Giant peritoneal loose body: a challenging diagnosis in an asymptomatic patient

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ABSTRACT

Peritoneal loose bodies are rare surgical or imaging findings. In most cases, PLBs are small in size, usually from 5 to 20 mm. Giant PLBs measuring more than 50 mm are even rarer. Only a few cases of giant PLBs have been reported. The authors report a case of a giant PLB with only mild symptoms and with no preoperative diagnosis, highlighting the importance of being aware of the characteristic findings of these lesions to establish a correct diagnosis, avoiding unnecessary surgery.

Keywords: Peritoneal loose body, Giant peritoneal loose body, Abdominal surgery, Intra-peritoneal surgery

INTRODUCTION

Peritoneal loose bodies (PLBs) also known as “peritoneal mice”, are asymptomatic benign abdominal masses, that create typical computed tomography (CT) scan images: well circumscribed circular masses, with a central hyperdense area.¹⁻⁵ PLBs theoretically form from an infarcted and detached epiploic appendix that through fibrosis, calcification and peritoneal fluid sedimentation, grow as the same way as a “pearl does inside an oyster”.¹ The first case was described by Littre in 1703.⁶ We report a case of a giant PLB diagnosed serendipitously through CT scan. Exploratory laparotomy revealed a free round, whitish, egg-like mass between the intestinal loops with no identifiable attachments to the surrounding structures. The remaining abdominal cavity was unchanged.

CASE REPORT

A 58-year-old Caucasian man, without previous abdominal surgeries and no medication was admitted for observation on our department after performing a CT

scan of the abdomen and pelvis that was requested following a suspicious abdominal ultrasound for unrelated causes, both requested by his familial physician. The CT scan revealed an oval-shaped lesion with an approximate size of 50 mm, lying on the right iliac fossa, with a calcified luminal core, sharing margins with terminal ileum, external iliac vessels and sigmoid colon (Figure 1). A diagnosis of teratoma was hypothesized based on the imaging findings. Laboratory values were within the normal range. The patient underwent abdominal and pelvic magnetic resonance imaging (MRI) to further characterization of the mass. It showed a mass with low intensity in the T1 and T2-weighted images with well-defined margins, not invading surrounding structures (Figure 2). The hypothesis of teratoma was raised. Exploratory laparotomy was proposed. After accessing the abdominal cavity, a whitish egg-like mass with 55x40x40 mm was found between the intestinal loops unattached to any surrounding structures. The mass had a slightly hard surface with a calcified nucleus (Figure 3). The remaining abdominal and pelvic cavities were explored with no signs of organ injury or

inflammatory process. Histologically, the mass was composed of hyalinized conjunctive tissue with a calcified central area surrounding fat necrosis.

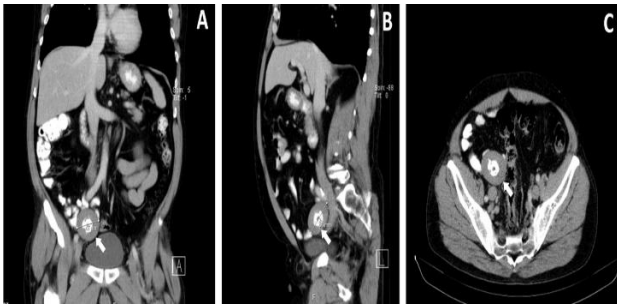


Figure 1: Contrast enhanced CT scan showed a non-enhanced round mass (arrow) with a central calcification located in the right iliac fossa in close relation with external iliac vessels; A) coronal plane, B) sagittal plane, C) transverse plane.

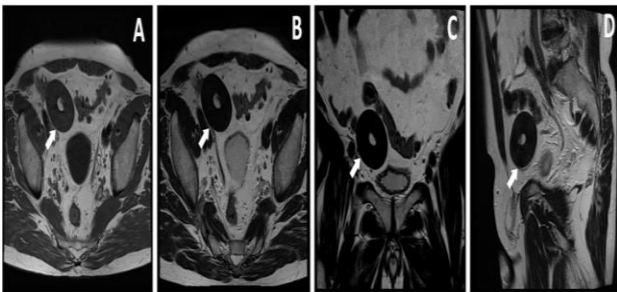


Figure 2: MRI findings showed a low intensity mass (arrow) both on T1 and T2 weighted images with a central adipose-like tissue; A) T1; transverse plane, B) T2; transverse plane, C) T2; coronal plane, D) T2; sagittal plane.

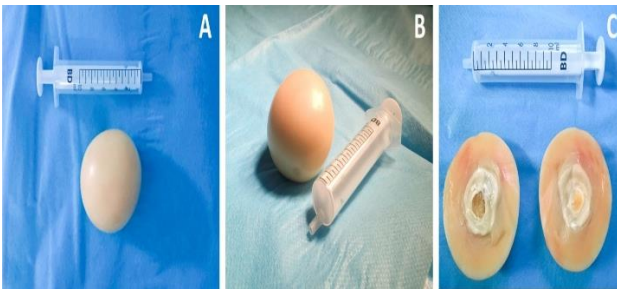


Figure 3: (A and B) The PLB measured 55 mm, with a whitish surface and an oval-shaped; (C) Cut surface showed an outer white fibrous layer and a central soft yellow nucleus surrounded by a calcified shell.

DISCUSSION

The real incidence of PLBs is unknown but it seems that giant PLBs are more common in males than females (18:4) and the majority of cases occurs in patients between 50 and 70 years old.³ They usually are incidental findings during surgery or autopsy. No specific

symptoms are associated with this lesion, however chronic abdominal pain, increased frequency of micturition and even acute intestinal obstruction or perforation due to extrinsic compression of the viscera have been described.¹⁻³ The pathogenesis of PLBs is still not clear. It is believed that PLBs originate on epiploic appendix. The sequence starts with chronic torsion of the epiploic appendix, followed by ischemia, saponification and calcification of fat tissue. Finally, the epiploic appendix detaches from the colon becoming a free body in the peritoneum. Over time, the PLB grows in size by continuous protein deposition from peritoneal serum. Sometimes the free body becomes attached to omentum and receives blood supply from it.^{2,4-6} Other possible sources are the omentum, fat tissue in the pancreas or autoamputated adnexa.^{1,3,7} CT scan and MRI can be helpful to identify a giant PLB, but preoperative diagnosis is hard to achieve as it is difficult to distinguish these loose bodies from other abdominal benign lesions.^{3,5} Only few reports have described PLBs imaging features. As in this case report, CT scan usually reveals a concentric round or oval shaped well-defined mass with central calcification, surrounded by a peripheral soft tissue. On MRI, giant PLBs are well-circumscribed low intensity masses on T1 and T2 weighted images.^{1,4}

Different locations on abdominal cavity on repeated scans has been a described characteristic of PLBs.⁴ This feature was not showed in our case report. The PLB was always located on the right iliac fossa on CT scan and two months later on the MRI. Differential diagnosis includes benign and malignant diseases: leiomyoma, rhabdomyoma, teratoma, fibroma, ovarian cyst, tubercular granuloma, urinary stones, gallstones, appendix stones, foreign bodies, colorectal and ovarian cancer and metastases.^{1,3} No surgical treatment is necessary if a PLB is diagnosed incidentally.⁶ However, in the majority of the reported cases, despite the lack of symptoms, a surgical resection was carried out to remove the suspected mass. This is likely to happen because of the difficulty to establish a definitive diagnosis based on physical examination and imaging.^{3,4} Surgical intervention should be reserved for giant PLBs associated complications such as intestinal obstruction and acute urinary retention, or when the diagnosis is in doubt.^{2,3} Nevertheless, some authors advocate the importance of surgical intervention when a giant PLB is suspected since they are more likely to cause symptoms that are sometimes acute and life-threatening. Further, other diseases may not be fully excluded by imaging alone, and surgical intervention might be necessary for definitive diagnosis.¹

CONCLUSION

PLBs measuring more than 50 mm are classified as giant PLBs and are very rare. PLBs are benign masses that should be suspected when imaging shows an oval-shaped mass with or without calcifications in the central region. Surgical intervention should be considered for PLBs

when there is associated symptoms or complications. If asymptomatic, surgical removal is indicated when the preoperative diagnosis is not clear.

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