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Two giant peritoneal loose bodies were simultaneously found in one patient: A case report and review of the literature



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ABSTRACT

INTRODUCTION: Peritoneal loose body (PLB) is usually small, therefore giant Peritoneal loose body (gPLB) with a diameter >5 cm has rarely been described in the literatures. We report a case of two gPLB simultaneously found in one patient.

PRESENTATION OF CASE: A healthy 79-year-old man palpated himself a solid mass with alternating localizations in his peritoneal cavity 6 months ago. It was not the complaint of frequency of urination until he saw the doctor a week ago. Surprisingly, two oval-shaped masses were simultaneously discovered by computed tomography (CT). One was in the peritoneal cavity, measuring 10.4*8.3 cm, weight 182.5 g, another was in the pelvic cavity, measuring 7.6*6.0 cm, weight 98.4 g. The case was confirmed by surgical operation.

DISCUSSION: The gPLB is considered as uncommon. Two gPLB which were simultaneously discovered in one patient have never been reported in the literatures. The small PLB is usually asymptomatic, occasionally, the gPLB can cause symptoms with acute retention of urine or intestinal obstruction. It is crucial to diagnosis the peritoneal loose body.

CONCLUSION: Two gPLB that situated in one patient are rare findings. Clinically, if a solid mass alternating localizations could be palpated in the Peritoneal cavity, CT or other imaging shows an oval-shaped mass with calcifications in the central region, PLB should be considered. Surgical removal is recommended for the patient with acute retention of urine or intestinal obstruction or unclear diagnosis.

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1. Introduction

Peritoneal loose bodies are usually small, white or pale gray, pea-shaped masses with a smooth glistening surface, occasionally found during laparotomy or autopsy [1]. They usually lie free in the peritoneal cavity, 0.5–2.5 cm in diameter. Therefore its “giant” form with a diameter >5 cm has rarely been described in the literatures. We report herein a case of two giant loose bodies simultaneously found which lie respectively in the peritoneal cavity and in the pelvic cavity, measuring 10.4*8.3 cm and 7.6*6.0 cm, weight 182.5 g and 98.4 g, which happened in a 79-year-old man and confirmed by operation. Our report follows the SCARE guidelines [2]

2. Presentation of case

A healthy 79-year-old man palpated himself a solid mass with alternating localizations in his peritoneal cavity 6 months ago. Ultrasonography was done in a local hospital in order to evalu-

ate the nature of the mass, so the lesion about 10.4*8.3 cm in the peritoneal cavity was found. Because of the complaint of frequency of urination without urgency and odynuria a week ago, the patient saw the doctor again. Surprisingly, two oval-shaped masses were discovered by computed tomography (CT). One was in the peritoneal cavity, measuring 10.4*8.3 cm, another was in the pelvic cavity, measuring 7.6*6.0 cm. They showed a low-density lesions with clear boundaries, a complete capsule, and two calcifications in the central part on the CT scan (Fig. 1). The patient had no complaints besides frequency of urination, Urine routine examination did not find abnormal. Tumor markers and other laboratory tests were within the normal range.

Considering length of abdominal incision same as laparoscopic surgery, laparotomy was performed. We extracted respectively two hard, egg-shaped peritoneal loose bodies from the vicinity of the spleen and from the pelvic cavity in front of the rectum, which was completely free in the peritoneal cavity (Fig. 2). Further exploration of abdominal and pelvic organs demonstrated that the liver, stomach, intestine, colon, and rectum were all normal. The specimen from the procedure was sent for histopathological examination. Our patient recovered well and discharged from the hospital in excellent condition after 3 days of postoperative.

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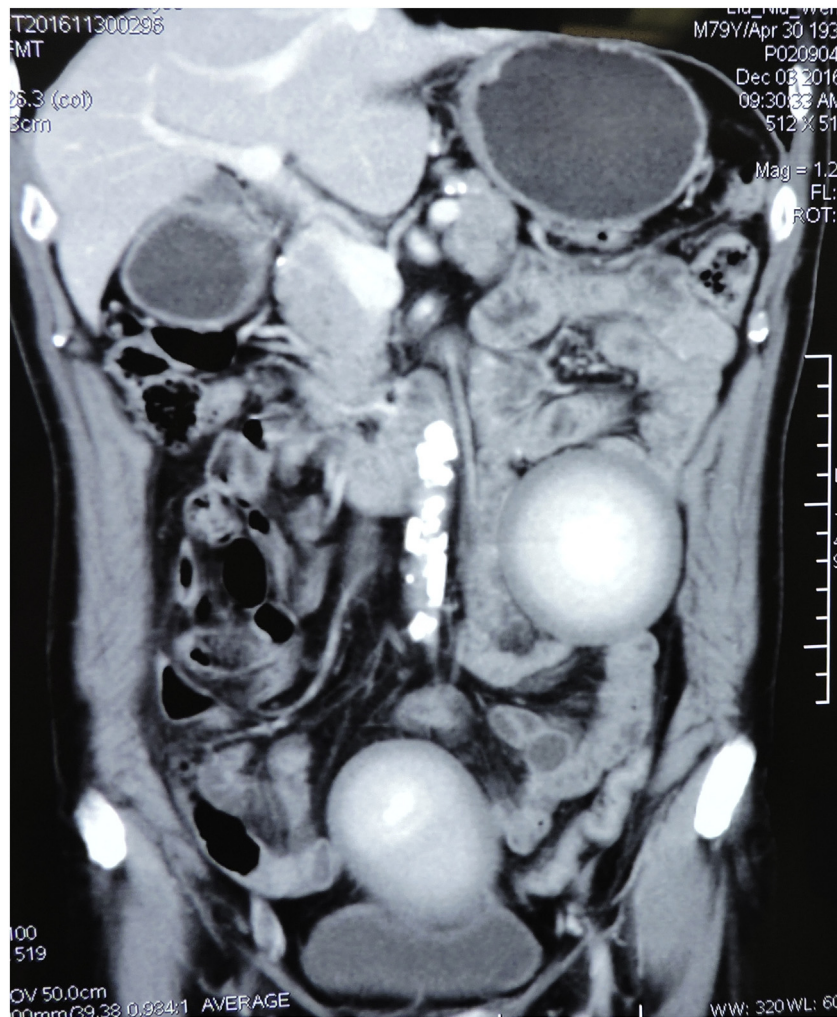


Fig. 1. CT-scan (coronal plane) showing two oval-shaped masses (one was in the peritoneal cavity, measuring 10.4*8.3 cm, another was in the pelvic cavity, measuring 7.6*6.0 cm), with central calcifications.

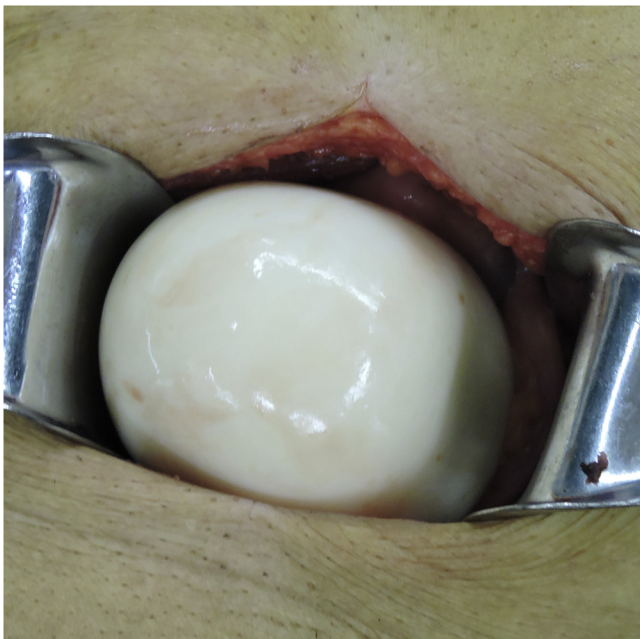


Fig. 2. Intraoperative view showing the freely floating, glistening PLB in the peritoneal cavity.

On gross pathologic examination, the peritoneal loose body in the vicinity of the spleen measure 10.4*8.3 cm, weight 182.5 g, another in the pelvic cavity measure 7.6*6.0 cm, weight 98.4 g. They were yellow-white, oval in shape, and had a bony-hard, smooth surface (Fig. 3). The cross section displayed a thread-like appearance. There were two calcified cores filled with yellow cheese-like material, and the interval distance between the two cores was about 5 mm (Fig. 4). Histologically, the lesion consisted of well-circumscribed, unencapsulated, paucicellular tissue, with an obviously hyalinized fibrosclerotic center. At the periphery, the lesion was paucicellular, containing spindled fibroblasts embedded in a collagenous stroma (Fig. 5).

3. Discussion

Peritoneal loose bodies also referred to as a “peritoneal mouse” [3]. PLB is supposed to emerge from a spontaneously distorted and consequently infarcted epiploic appendix [4], autoamputated parts of the greater omentum [5], the adnexa [6], or fat tissue in the pancreas [7]. Then it detaches from the serosa and undergoes a process of saponification and calcification [8]. Finally, the deposition of intraabdominal fluids on its surface and its interaction with the surrounding peritoneum are supposed to cause the characteristic histopathological structure.

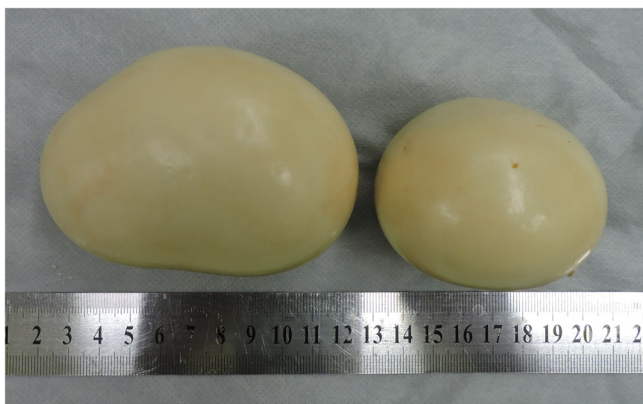


Fig. 3. Two giant PLB after extraction from the abdominal cavity, with a yellow-white, oval in shape, and a bony-hard, smooth surface one measuring 10.4*8.3 cm, weight 182.5 g; another measuring 7.6*6.0 cm, weight 98.4 g.

The incidence of PLB is not clear around the world. Small free bodies, less than 2 cm in diameter, are very common accidental findings during laparotomy performed. The giant PLB in diameter above 5 cm is considered as uncommon. Mohri et al [9] reported the giant peritoneal loose body measured 95*86 mm in 2007. We reported a largest loose body measuring 9.8*8.6 cm in 2012 [10]. In the present report, Two giant peritoneal loose bodies (10.4*8.3 cm, weight 182.5 g and 7.6*6.0 cm, 98.4 g respectively) were simultaneously discovered. Which have never been reported in the literatures. Due to the role of gravity, the PLB are usually located in the pelvic cavity or in the vicinity of the spleen at supine position.

The growth speed of the peritoneal loose body and the factors that promote or inhibit growth are unknown. The size of the peritoneal loose body usually increases slowly. However, Mohri et al [9] discovered a peritoneal loose body in a 73-year-old man's pelvic cavity that grew from 73 × 70 mm to 95 × 75 mm in 5 years. Huang et al [10] reported a peritoneal loose body that increased 2 cm in the first 19 years, then increased quickly from 5 cm to 9.8 cm in one year. In addition, there was another case of a peritoneal loose body that did not significantly change in size or appearance in 3 years [11].

Hong zhang et al [12] studied 22 cases of peritoneal loose body in the literatures and found that peritoneal loose body was more common in males. The incidence rate ratio between males and females is 18:4. The age span of patients at the time of diagnosis ranges from 2 months to 79 years, and the majority occurs in patients between 50 and 70 years old. Most peritoneal loose bodies range from 5 to 25 mm in size and generally do not cause any symptoms.

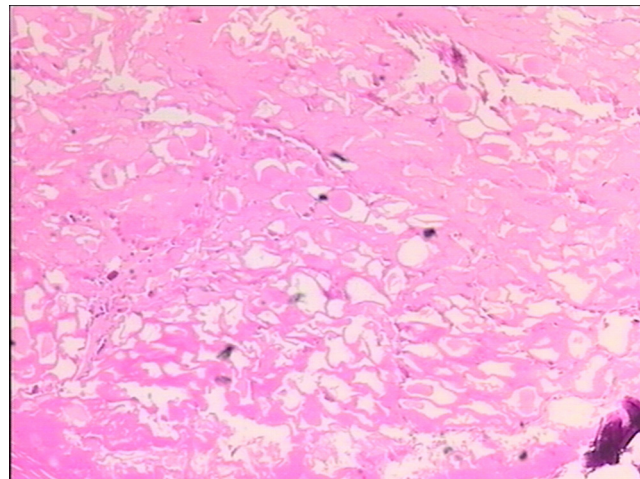


Fig. 5. Histological examination: showed a calcified necrosis of fat tissue (nucleus) with hypocellular fibrolamellar tissue with numerous micro calcifications (outer layers).

The small PLB is usually asymptomatic. Occasionally, the giant PLB can cause symptoms like abdominal and/or pelvic pain or discomfort with alternating localization [13], or urinary retention [13,14] due to extrinsic compression. However, Mateusz Rubinkiewicz et al. [15] reported a case of the mechanical bowel obstruction caused by loose body which originated from Autoamputated leiomyoma of the uterus and the patient died eventually presenting the symptoms of multiorgan dysfunction syndrome. In this report, although the two free bodies are large and heavy enough, only symptom of frequent urination occurred.

It is crucial to diagnosis the peritoneal loose body with symptomatic or giant. It may be helpful for differentiation between free body and neoplasm when a lesion in the peritoneal cavity changes its location depending on patient's body position; its core comprise necrotic remains of adipose tissue and peripheral parts consist of calcificated tissue, feature of lesion is lack of enhancement after the contrast application in the computed tomography; in magnetic resonance imaging a free body is a hypointense lesion in T1 and T2 sequences [16,17].

Treatment is surgical removal because it is not easy to establish definite diagnosis preoperatively via physical examination and imaging technologies. Laparoscopic exploration is recommended [18–21]. Laparoscopy not only reduces surgical trauma but also shortens the patient's hospitalization time.



Fig. 4. Cross section of the two gPLB: two calcified cores filled with yellow cheese-like material, and the interval distance between the two cores was about 5 mm, the outer layers were yellow to white, homogenous and had a lamellar, rubber-like texture.

4. Conclusions

Two giant peritoneal loose bodies that situated in one patient are rare findings. Clinically, if a solid mass alternating localizations could be palpated in the Peritoneal cavity, CT or other imaging shows an oval-shaped mass with calcifications in the central region, peritoneal loose body should be considered. Surgical removal is recommended for the patient with acute retention of urine or intestinal obstruction or unclear diagnosis.

Conflicts of interest

There are no conflicts of interests.

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Ethical approval

This study was approved by the ethics committee of Shanxi province tumor hospital. This study was conducted in accordance with the Declaration of Helsinki. Informed Consent Version 1.0.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Correspondence to: Qingxing Huang, Jianhong Dong.
The surgeon and the author: Qingxing Huang.
Assistant: Jun Ma, Zhenhua Wang.
Surgical guidance: Jianhong Dong.
data collection and data analysis : Aihong Cao.

Registration of research studies

All patient information is listed in the article. So we did not register.

Guarantor

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