

A case of intestinal obstruction caused by a peritoneal loose body mimicking gallstone ileus

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Peritoneal loose bodies (also known as peritoneal mice) are usually small in size, ranging from 0.5 to 2.5 cm, and asymptomatic. They have been reported to grow to larger dimension causing symptoms such as acute urine retention (1-2), and abdominal pain (3-4). We report a rare case presenting initially as gallstone ileus. Final diagnosis at exploratory laparotomy was a peritoneal loose body causing intestinal obstruction.

A 69-year-old woman presented to the emergency department, complaining of abdominal pain with nausea and vomiting since midnight. Her medical history was significant for acute appendicitis with rupture and general peritonitis 50 years previously and status post hysterectomy 30 years previously for myomatous uterus. She had two episodes of intestinal obstruction in recent 3 years which were resolved after conservative management.

On physical examination, her abdomen appeared distended, with tenderness over peri-umbilical and hypogastric regions, and was tympanitic at percussion. She had mild hyperactive bowel sounds and succussion splash at auscultation. A complete blood cell count revealed evidence of leukocytosis ($12.2 \times 10^3/\mu\text{L}$) with 91.5% neutrophils. A plain X-ray of the abdomen revealed multiple dilated small-bowel loops and a relative paucity of large-bowel gas. A computed tomography (CT) of the abdomen and pelvis showed dilatation of the proximal small bowel and one small, calcified gallstone in the gallbladder. Besides, another hyperdense calcified lesion was visualized in the right lower abdomen measuring $4.0 \times 3.0 \times 2.3$ cm (Fig. 1). Gallstone ileus was suspected.

At laparotomy, the concretion was found outside the lumen of the terminal ileal loop, within the peritoneal cavity. It adhered firmly to the ileum causing compression of the bowel with dilatation of the proximal loops and was removed by cautious lysis of adhesion bands. Microscopically, the specimen showed a central dystrophic calcification with peripheral dense fibrosis, consistent with peritoneal loose body.

It is mostly believed that peritoneal loose bodies originate from chronic torsion of *appendices epiploicae* resulting in ischemia, saponification, and calcification of



Fig. 1. — A computed tomography (CT) of the abdomen and pelvis showing one ovoid, calcified lesion in the right lower abdomen (arrow) and one small stone in the gallbladder.

the fat tissue following by atrophy and disappearance of the pedicle (5). Although it is known that peritoneal loose bodies can present as a calcified mass on CT and a low-intensity mass, to the same degree as the muscle tissue, on both T1- and T2-weighted magnetic resonance image (MRI), it remains difficult to make an accurate pre-operative diagnosis of intra-peritoneal calcified mass lesions. The differential diagnosis includes calci-

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fied leiomyoma, fibroma, desmoid tumors, teratoma, metastatic lesions of ovarian cancer, spontaneously amputated ovary, uterine fibroid, urinary stones, gallstones, appendix stones, calcification of lymph nodes, mesentery cyst, nodal tuberculosis, and lymphoma (6). Recently, the characteristic finding of lamellar structures surrounding a central calcification, and contrast-enhancing effect at the surface on wide-window-width CT scanning offers a reasonable certainty to diagnose peritoneal loose bodies (7).

The treatment of the symptomatic loose bodies is surgical removal via laparoscopy (4,8) or exploratory laparotomy (1-3,5,9). The diagnostic laparoscopy is initially suggested for those intra-peritoneal calcified lesions due to difficult accurate pre-operative diagnosis via physical examination and currently available image studies. Intestinal obstruction caused by compression of a larger peritoneal loose body should be considered in patients with intra-peritoneal calcified masses. Laparoscopic surgery is suitable for selective cases minimizing the risks of surgical trauma.

References

1. BHANDARWAR A.H., DESAI V.V., GAJBHIYE R.N., DESHRAJ B.P. Acute retention of urine due to a loose peritoneal body. *Br. J. Urol.*, 1996, **78** : 951-2.
2. SHEPHERD J.A. Peritoneal loose body causing acute retention of urine. *Br. J. Surg.*, 1951, **39** : 185-7.
3. MOHRI T., KATO T., SUZUKI H. A giant peritoneal loose body : report of a case. *Am. Surg.*, 2007, **73** : 895-6.
4. TAKAYAMA S., SAKAMOTO M., TAKEYAMA H. Clinical challenges and images in GI. Image 1 : huge peritoneal loose body in the pelvic cavity. *Gastroenterology*, 2009, **136** : 404, 730.
5. GHOSH P., STRONG C., NAUGLER W., HAGHIGHI P., CARETHERS J.M. Peritoneal mice implicated in intestinal obstruction : report of a case and review of the literature. *J. Clin. Gastroenterol.*, 2006, **40** : 427-30.
6. SAKIYAMA H., UENO F., YAMASAKI K. Intraabdominal loose bodies considered to be calculi in the genitourinary tract (in Japanese with English abstract). *Nishi-Nippon Hinyokika Zasshi*, 1983, **45** : 111-3.
7. OHGITANI D., KANI H., MATSUKI M., KANAZAWA S., NARABAYASHI I. A case of giant peritoneal loose body : usefulness of wide window width CT. *Nippon Acta Radiol.*, 2004, **64** : 223-224.
8. NOMURA H., HATA F., YASOSHIMA T., KUWAHARA S. Giant peritoneal loose body in the pelvic cavity : report of a case. *Surg. Today*, 2003, **33** : 791-3.
9. TAKADA A., MORIYA Y., MURAMATSU Y. *et al.* A case of giant peritoneal loose bodies mimicking calcified leiomyoma originating from the rectum. *Jpn. J. Clin. Oncol.*, 1998, **28** : 441-2.