



ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2021; 5(3): 166-168
Received: 14-03-2021
Accepted: 21-04-2021

Michihide Maeda
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Hikari Unno
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Yukako Oi
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Sahori Kakuda
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Masahiro Watanabe
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Tsuyoshi Hisa
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Yukinobu Ota
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Shoji Kamiura
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Corresponding Author:
Michihide Maeda
Department of Gynecologic
Oncology, Osaka International
Cancer Institute, Osaka, Japan

Laparoscopic resection of a peritoneal inclusion cyst mimicking an ovarian borderline tumor

Michihide Maeda, Hikari Unno, Yukako Oi, Sahori Kakuda, Masahiro Watanabe, Tsuyoshi Hisa, Yukinobu Ota and Shoji Kamiura

DOI: <https://doi.org/10.33545/gynae.2021.v5.i3c.921>

Abstract

A 70-year-old woman was referred with an adnexal mass present for several years that had enlarged from 3 to 5 cm during menopause and was suspected to be ovarian cancer. Magnetic resonance imaging showed a 5 cm pelvic mass with a 3 mm nodule in the tumor wall. The tumor had low-signal intensity on T1-weighted images and high-signal intensity on T2-weighted images, while the nodule showed low-signal intensity on T1- and T2-weighted images with contrast enhancement. Since an ovarian borderline tumor could not be ruled out, diagnostic laparoscopy was performed and confirmed the mass to be a peritoneal tumor, which was resected. Pathological examination revealed a benign peritoneal tumor, which was diagnosed as a peritoneal inclusion cyst. Peritoneal inclusion cysts are often confused with ovarian neoplasms because of their various appearances on imaging studies. In such cases, diagnostic laparoscopy is useful in ruling out malignancy.

Keywords: Peritoneal inclusion cyst, ovarian tumor, laparoscopy, imaging

Introduction

Peritoneal inclusion cysts, also known as benign cystic mesothelioma, peritoneal pseudocysts and mesothelial cyst of the peritoneum, usually occur in reproductive women who have a history of prior pelvic surgery, pelvic inflammatory disease, or endometriosis ^[1]. Patients with peritoneal inclusion cysts sometimes present with progressive abdominal or pelvic pain and/or a subjectively palpable abdominal mass that is sometimes asymptomatic and occasionally detected on imaging ^[2]. Making a preoperative diagnosis is difficult as peritoneal inclusion cysts show a variety of appearances on imaging, and can be confused with ovarian neoplasms ^[3]. This paper reports a case of a laparoscopically resected postmenopausal peritoneal inclusion cyst that was initially suspected of being an ovarian tumor based on preoperative imaging.

Case Report

A 70-year-old Japanese woman, gravida 2 para 2, was referred to our hospital due to an adnexal mass that had enlarged from 3 to 5 cm in a span of 5 years and is suspected to be ovarian cancer. Nodules were also noted in the wall. She had no history of prior pelvic surgery. Magnetic resonance imaging showed a 5 cm round pelvic mass with 2-3 mm nodules in the tumor wall. The tumor showed low-signal intensity on T1-weighted images and high-signal intensity on T2-weighted images, while the nodule had low-signal intensity on both T1- and T2-weighted images with contrast enhancement (Figure 1). Since no normal ovaries were detected by MRI, the diagnosis of ovarian tumor was made. On contrast enhancement, the tumor showed a nodule for which we could not rule out an ovarian borderline tumor. Although laparoscopic surgery is controversial for ovarian borderline tumors, laparoscopic surgery was chosen since the tumor is most likely benign. An intra-abdominal inspection revealed that this tumor was not ovarian in origin, but originated instead on the right side of Douglas' pouch and was adherent to the rectal serosa (Figure 2). Due to the tumor's proximity to the right ureter, a retroperitoneal dissection was performed to identify the ureter. Following isolation of the right ureter and adhesiolysis, the tumor was removed intact. The tumor was collected and placed in a specimen bag inserted into the peritoneal cavity. A spray-type adhesion barrier was used prior to peritoneal cavity closure. Macroscopically, the peritoneal tumor was 4 cm with a white nodules with serous content (Figure 2).

Pathological examination of the tumor showed mesothelial proliferation, the presence of hemosiderin-phagocytic macrophages, and no obvious malignancy. The final diagnosis

was peritoneal inclusion cysts. The presence of hemosiderin-phagocytic macrophages suggested that the peritoneal inclusion cyst was formed by old endometriosis.

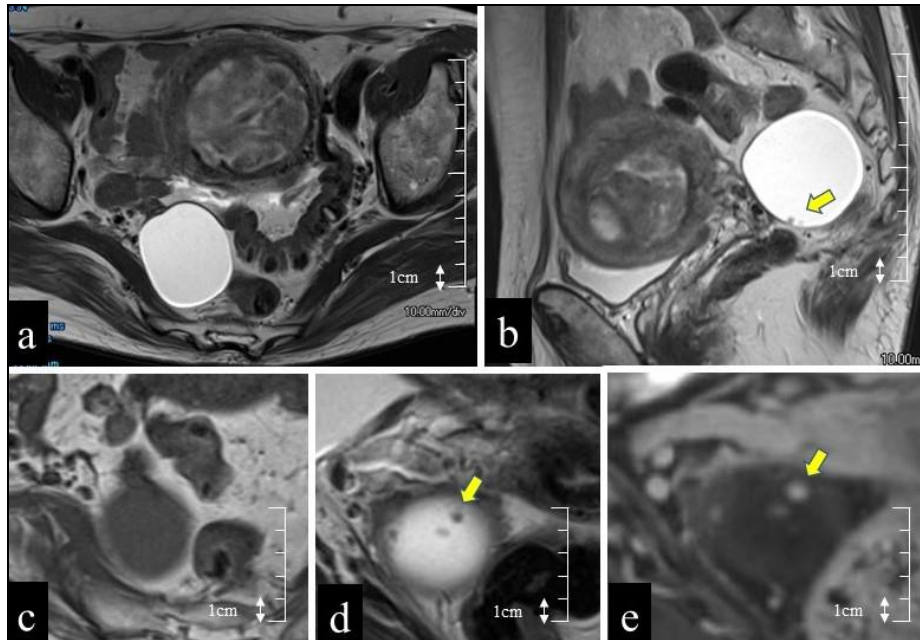


Fig 1: Magnetic resonance imaging of the pelvic tumor. The tumor had low-signal intensity on T1-weighted images and high-signal intensity on T2-weighted images, while the nodules had low-signal intensity on T1- and T2-weighted images and had contrast enhancement. The yellow arrows show the nodules. (a), (b), (d) are the T2 weighted images, (c) is the T1-weighted image, and (e) is the contrast-enhanced T1-weighted image.

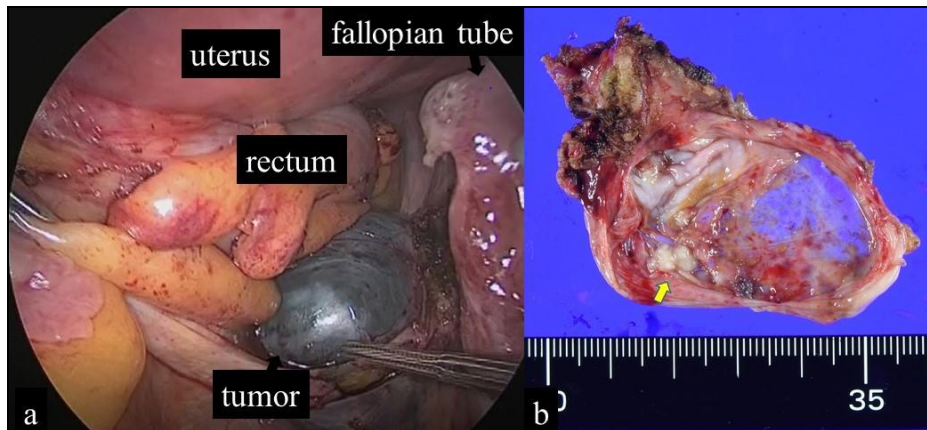


Fig 2: Intra-abdominal inspection during laparoscopy and macroscopic finding. The 5 cm tumor was found in Douglas' pouch and adhesions with the rectum were observed. The tumor had 3 mm white nodules. (a) is the image during laparoscopy and (b) is the macroscopic finding.

Discussion

This is a case of a contrast-enhancing nodule on a pelvic tumor that was initially suspected to be an ovarian borderline tumor on perioperative diagnosis. Peritoneal inclusion cysts are usually confused with ovarian tumors during preoperative diagnosis. On preoperative imaging, the presence of normal ovaries assisted in differentiation [3, 5]. In addition, the shape of peritoneal inclusion cysts is often irregularly formed by the surrounding normal anatomy, whereas ovarian tumors are mostly round or oval in shape [4]. However, in this case, due to the patient being menopausal and the tumor was round in shape with no surrounding normal anatomical structures, it was not possible to identify the normal ovary (Figures 1A, B, C), making the preoperative diagnosis difficult to confirm whether the tumor was of peritoneal or ovarian in origin. In a previous report, peritoneal inclusion cysts did not have nodules on the wall [5]. However, this case and another report found nodules on

peritoneal inclusion cysts [2]. The presence of the nodule in the tumor wall ruled out the tumor not being a peritoneal inclusion cyst. When the pelvic tumor is likely to be a peritoneal inclusion cyst based on imaging and medical history, and the tumor does not present with symptoms, the patient is eligible for conservative treatment. On the other hand, if imaging studies are unable to rule out ovarian cancer or borderline ovarian tumor, surgical resection is required. Definitive diagnosis should be made by intraabdominal inspection and histopathologic examination. Pelvic tumors with contrast-enhanced nodules are likely to be malignant and require resection to rule out malignancy. In this case, the pelvic tumor was 5 cm in size and, although the nodule was small, it was contrast enhanced. This was why the perioperative diagnosis was likely to be a borderline tumor, and resection was necessary for definitive diagnosis.

Laparoscopic resection was chosen to excise the pelvic tumor.

The choice of laparotomy or laparoscopy for borderline ovarian tumors is controversial. Previous retrospective studies on surgical techniques for ovarian borderline tumors have reported no significant difference in recurrence rates and fewer postoperative complications with laparoscopic surgery, despite the shorter follow-up period^[6]. However, for tumors larger than 10 cm in diameter, the frequency of tumor rupture is significantly higher in laparoscopic surgery than in open surgery^[6]. Tumor rupture or tumor spillage may result in a poor prognosis. Laparoscopic treatment of ovarian borderline tumors may be feasible, but eligibility should be reviewed if the tumor is large and could not be resected without tumor rupture or tumor spillage. In the treatment of the peritoneal inclusion cysts, laparoscopic surgery was superior to open surgery in terms of mean estimated blood loss, mean hospital stay, and postoperative complications. In addition, the recurrence rate was not significantly different^[7]. Laparoscopy is associated with a reduction in the formation and reformation of adhesions^[8], and since adhesions can cause peritoneal inclusion cysts, laparoscopy may reduce the recurrence rate of peritoneal inclusion cysts. Laparoscopic treatment of peritoneal inclusion cysts is also feasible. Whether this case was a borderline tumor or peritoneal inclusion cyst, a laparoscopic approach is acceptable.

Conclusion

Differentiating an ovarian tumor from a peritoneal inclusion cyst can be challenging and is much more difficult for menopausal patients. Peritoneal inclusion cysts may mimic ovarian neoplasm. In such cases, a definitive diagnosis can only be made via intra-abdominal inspection and histopathologic examination. If the tumor is small and can be resected without rupture, laparoscopic diagnosis is useful to rule out malignancy.

Financial support and sponsorship: Nil

Conflicts of interest: There are no conflicts of interest

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

References

1. Moran RE, Older RA, De Angelis GA, Baghdady BH, Chrisman HB, Ciambotti JM. Genitourinary case of the day. Giant adrenal myelolipoma. *AJR Am J Roentgenol* 1996;167(1):246-248.
2. Jain KA. Imaging of peritoneal inclusion cysts. *AJR Am J Roentgenol* 2000;174(6):1559-1563.
3. Vallerie AM, Lerner JP, Wright JD, Baxi LV. Peritoneal inclusion cysts: a review *Obstet Gynecol Surv.* 2009;64(5):321-334.
4. Veldhuis WB, Akin O, Goldman D, Mironov S, Mironov O, Soslow RA, *et al.* Peritoneal inclusion cysts: clinical characteristics and imaging features. *Eur Radiol* 2013;23(4):1167-1174.
5. Kurachi H, Murakami T, Nakamura H, Hori S, Miyake A, Kozuka T, *et al.* Imaging of peritoneal pseudocysts: value of MR imaging compared with sonography and CT. *AJR Am J Roentgenol* 1993;161(3):589-591.

6. Ødegaard E, Staff AC, Langebrekke A, Engh V, Onsrud M. Surgery of borderline tumors of the ovary: retrospective comparison of short-term outcome after laparoscopy or laparotomy. *Acta Obstet Gynecol Scand.* 2007;86(5):620-626.
7. Lee SW, Lee SJ, Jang DG, Yoon JH, Kim JH. Comparison of laparoscopic and laparotomic surgery for the treatment of peritoneal inclusion cyst. *Int J Med Sci* 2012;9(1):14-19.
8. Gutt CN, Oniu T, Schemmer P, Mehrabi A, Büchler MW. Fewer adhesions induced by laparoscopic surgery? *Surg Endosc* 2004;18(6):898-906.