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CASE REPORT

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Multiloculated peritoneal inclusion cyst treated successfully with laparoscopic surgery

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Abstract *Background*: Multiloculated peritoneal inclusion cysts or benign cystic mesotheliomas are most commonly found in women of reproductive years; the disease involves the abdomen, pelvis and retroperitoneum. *Case*: A 33-year-old, para 3-0-0-3, Thai woman presented to the hospital upon an incidental finding of left ovarian cyst and a mild pelvic pain for three months. Her pelvic examination revealed left ovarian cyst. Transvaginal ultrasonogram demonstrated a multiloculated cyst size 61×40×55 mm^3 adherent to the normal left ovary. Laparoscopic surgery was performed. There was a multiloculated cyst 6 cm in diameter in the left pelvic cavity. The cyst was excised and the histopathology revealed inclusion cysts. She was well at discharge and throughout the four-week and six-month follow-up periods. *Conclusion*: Although multiloculated peritoneal inclusion cyst is uncommon, it should be included in the differential diagnosis of adnexal masses. Surgical excision remains the current recommended treatment for symptomatic disease. Surgical excision by laparoscopy might be an alternative method for successful management.

Keywords Multiloculated · Mesothelioma · Peritoneal · Inclusion cysts · Laparoscopy

Introduction

Multiloculated peritoneal inclusion cysts or benign cystic mesotheliomas were first described in 1928 by Plaut [1]. These cysts are most commonly found in women of reproductive years and they involve the abdomen, pelvis and retroperitoneum [2, 3]. There have been a few hundred previously reported cases of multiloculated peritoneal inclusion cysts [3, 4], but no case has been treated via laparoscopic surgery. Herein, we report a case of multiloculated peritoneal inclusion cysts that involve the pelvis that was successfully treated with laparoscopic surgery.

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Case report

A 33-year-old Thai woman, para 3-0-0-3, presented to the hospital upon incidental finding of a left ovarian cyst and mild pelvic pain for three months. The pain was described as a dull ache without any radiating pain. She denied nausea, vomiting, urinary frequency and diarrhea. Her last menstrual period was November 10, 2003. She had a regular menstrual cycle. She had no history of dysmenorrhea or hypermenorrhea. She denied history of surgery. However, she had a history of convulsion and was on 100 mg dilantin daily. The rest of her past history and medical history was unremarkable.

Upon presentation, the patient's vital signs were stable. She was not pale. Abdominal examination revealed no mass. Pelvic examination revealed a closed cervix without cervical motion tenderness. Her uterus was of normal size. A left adnexal mass, 5 cm in diameter, cystic in consistency, with mild tenderness was detected.

The laboratory investigation included a hematocrit of 37.8%, a white blood cell count of 8,730 cells/mm^3 with 56.5% neutrophils and a platelet of 382,000/mm^3. Her urine analysis was normal. Transvaginal ultrasonogram showed a normal-sized uterus, a normal right ovary, and a multiloculated cyst of size 61×40×55 mm^3 adherent to the normal left ovary and packed in a cul-de-sac (Fig. 1). There was no free fluid in the cul-de-sac.

The pre-operative diagnosis was a left paraovarian cyst. The laparoscopic surgery was performed by a triple 5-mm port approach, one in the infraumbilicus for laparoscope and the additional two at suprapubic and left lateral pelvic areas for accessory instruments. There was no ascitic fluid. The uterus was of normal size with a

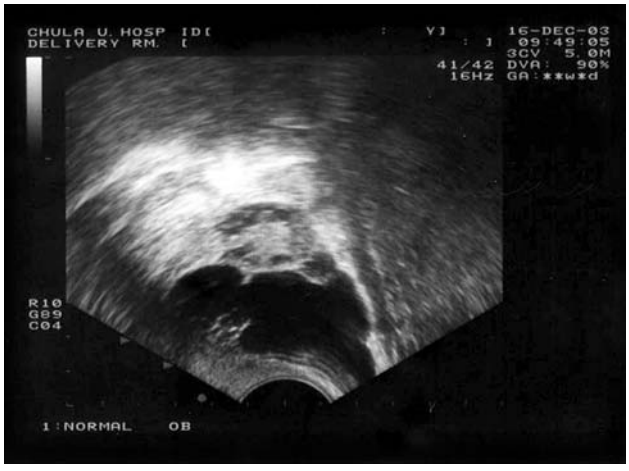

Fig. 1 Transvaginal ultrasound demonstrated a multiloculated cyst size 61×40×55 mm^3 beside the normal left ovary

6-cm multiloculated cyst embedded under the anterior aspect on the left side of the isthmic portion of the uterus. Both fallopian tubes and ovaries appeared normal. The anterior peritoneum at vesicouterine fold over the cyst was then opened transversely with scissors. The multiloculated thin wall cyst was freed from surrounding tissue. In doing this, the cyst wall was accidentally ruptured. The whole cyst was removed through the left lateral pelvic port. The pelvic cavity was thoroughly irrigated with normal saline. The peritoneal incision over the removed cyst was laparoscopically sutured. After deflating intraabdominal carbon dioxide gas, the laparoscopic ports were sutured. The cut surface of the cyst revealed multiple thin-walled small cysts containing serous fluid. The histology revealed inclusion cysts (Fig. 2). The postoperative course was uneventful and she was discharged on the second postoperative day. The patient was still well at the four-week and six-month follow-ups.

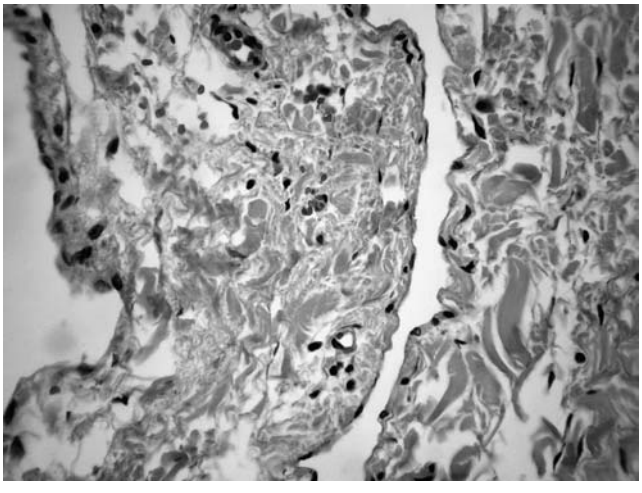

Fig. 2 The histology demonstrated cystic spaces lined by a single layer of flat mesothelial cells separated by thin fibrous septa (H&E, ×100)

Discussion

A multiloculated peritoneal inclusion cyst is defined as cystic mesothelial proliferations that may extensively involve the pelvis, upper abdomen and retroperitoneum [3]. In the case presented here, the multiloculated peritoneal inclusion cyst was found in the pelvis only. The other synonyms include benign multicystic mesothelioma, inflammatory cysts of peritoneum, postoperative peritoneal cysts, loose/free/unattached cysts of the peritoneal cavity, benign papillary peritoneal cystosis and infiltrating adenomatoid tumor [2, 3].

The exact pathogenesis of the disease remains a mystery. Most experts agree that a multiloculated peritoneal inclusion cyst represents an inflammatory reaction and does not represent cystic neoplasms [2, 5]. Them ultiloculated peritoneal inclusion cyst in this case occurred in a woman of childbearing age, similar to previous reports [2, 3, 5]. However, several cases have been found in men [4].

The reported symptom in the present case was mild pelvic pain. This was also similar to previous reports where the patients usually presented with chronic abdominal or pelvic pain [2]. However, sometimes the lesions have been incidental, found during a laparotomy [6]. In contrast with previous reports, where most cases of multiloculated peritoneal inclusion cyst had previous surgery, history of pelvic inflammatory disease (PID) or endometriosis [3, 5], this case had neither previous surgery nor history of PID nor endometriosis.

It was not possible to make a diagnosis in this present case before operation. The ultrasonogram demonstrated a solitary multiloculated thin-walled cyst in the pelvic cavity, and it has been previously reported that ultrasound or computed tomography can detect solitary or multiple thin-walled cysts in the abdominal or pelvic cavities [2]. An ovary surrounded by septations and fluid was the most common finding on transvaginal sonography [7]. Different diagnoses of this cystic lesion include adenomatoid tumor, malignant mesothelioma, serous carcinoma, cystic lymphangioma and lymphocele [2].

The operative finding is a cluster of cysts throughout serosa-covered structures, or free-floating [3]. Accurate diagnosis requires an histologic review. Microscopically the cysts are lined with a single layer of cuboidal or flattened cells. These cells have been described as a hobnail configuration [3]. Areas of papillary projections, nests or tubules with some cytologic atypia are not uncommon [8].

The treatment for this case was resection by laparoscopic surgery. The recommended treatment is resection of as many symptomatic cysts as possible [2]. Sometimes this requires removal of attached organs such as ovaries, uterus or spleen [2]. Recurrences of multiloculated peritoneal inclusion cysts after resection have been well documented [3, 8–10]. Recently, new medical therapies have been made available for the treatment of recurrent multiloculated peritoneal inclu-

sion cysts. These therapies include the use of tamoxifen [9], and a long-acting GnRH agonist [10]. The role of medical treatment in cases of symptomatic recurrent multiloculated peritoneal inclusion cysts is yet to be determined.

In conclusion, although a multiloculated peritoneal inclusion cyst is uncommon, it should be included in the differential diagnoses of adnexal masses. Surgical excision remains the recommended treatment for symptomatic disease. Surgical excision by laparoscopy may be an alternative method for successful management.

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