Abscess Formation Complicated in Ovarian Mucinous Cystadenoma: A Case Report

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Introduction

Isolated ovarian abscess is an unusual gynecologic infection which involves the parenchyma of the ovary. Tuboovarian abscess, by contrast, involves the ovary and fallopian tube which is almost always a sequel of repeated attacks of acute salpingooorhoritis.

In 1869, Aitken gave the earliest report of an ovarian abscess. Case reports were also offered by Coe, Ohman and Brindeau. Black presented the first major series of 42 cases of ovarian abscess in 1936. Thereafter, several serial studies of ovarian abscesses were reported continuously.

Here, we present a case of ovarian mucinous cystadenoma complicated with abscess formation. The patient was treated successfully with operative removal and parenteral antibiotics. To our knowledge, the presence of abscess formation in an ovarian mucinous cystadenoma has not been described in the past English literature.

Case Report

A 75-year-old housewife (G4P3A1) was admitted to Taiwan Provincial Tainan Hospital because of progressive body weight loss and prominent abdominal mass for 6 months.

The patient had been well before. Her past medical history was unremarkable except for uterine curettage 30 years ago. Since then, she had experienced body weight gain (15 kilogram) and increasing abdominal girth in these 30 years. Six months before admission, she began to suffer from progressive body weight loss (12 kilogram), a palpable abdominal mass and frequency of micturition. She denied fever, abdominal pain, bowel habit changes, night sweats or dyspnea in the recent 6 months. There was no history of diabetes mellitus, tuberculosis, syphilis, gonorrhea or other venereal diseases.

On physical examination, the patient appeared mildly ill and anemic. The body temperature was 36.7°C, the pulse was 84/min, regular, and the respiration was 20/min. The blood pressure was 150/70 mmHg without orthostatic change. The head and neck were normal. The lungs were clear. The heart beat was regular and no murmur was audible. The abdomen was soft and globular; the liver and spleen were not felt; the mid- and low-abdomen was occupied with a huge mass (30 × 35 cm in size) which was soft, nontender, slightly movable and no skin change. No tenderness was found in the costovertebral angles or spine. The extremities were normal. No lymphadenopathy was found. Neurologic examination was normal. Examination of the genitalia and rectum was negative.
The routine blood tests were: Hemoglobin, 8.4 mg/dl; hematocrit 26%; white blood cell count, 10500/mm³, with 74% neutrophils, 1% band forms and 25% lymphocytes; platelet count, 300,000/mm³; erythrocyte sedimentation rate, 130 mm/hour. The urine examination gave no abnormal finding. Blood biochemical studies showed: urea nitrogen, 10 mg/dl; creatinine, 0.9 mg/dl; glucose, 80 mg/dl; albumin, 3.0 mg/dl; globulin, 4.0 mg/dl; glutamate oxaloacetic transaminase, 13 U/l; glutamate pyruvate transaminase, 72 U/l; lactic dehydrogenase, 476 U/l; gammaglutamyl transferase, 25 U/l; alkaline phosphatase, 72 U/l; cholesterol, 128 mg/dl; triglyceride 124 mg/dl; amylase, 179 SU; sodium, 144 mEq/l; potassium 3.2 mEq/l; chloride, 110 mEq/l; IgG, 2680 mg/dl; IgA, 682 mg/dl; IgM, 143 mg/dl. The electrocardiogram was normal.

The admission chest roentgenogram revealed no abnormality and plain radiograph of the abdomen showed a huge mass which almost occupied the whole abdomen with lateral displacement of the bowel. The abdominal ultrasonography (Fig. 1A) and computerized tomography (Fig. 1B) both disclosed a large, multiloculated cystic mass with extended from the suprapubic area to the mid-abdomen. Aspirate from the mass showed tenacious, yellow-greenish and not foul-smelling fluid. Laboratory results of the aspirate were: protein, 6.5 g/dl; glucose, 6 mg/l; (blood glucose, 85 mg/dl); lactic dehydrogenase, 14476 U/l; triglyceride, 1408 mg/dl; cholesterol, 1320 mg/dl and positive Rivalta test. The Gram’s stain of the aspirate showed polymorphonuclear neutrophils and Gram-positive chain-forming cocci. The acid-fast stain or mucin stain was negative. Cytologic examination of the aspirate revealed no evidence of malignancy. Though three sets of blood cultures yielded no growth of microorganism, the patient was treated with parenteral cefuroxime (3 gram/day). Group B streptococci (Streptococcus agalactiae) was subsequently isolated from the aspirate and the patient kept on being treated with parenteral cefuroxime for two weeks. On the 15th hospital day, the patient received surgical intervention. Intraoperative findings disclosed that the mass originated from the right ovary and markedly adhered to the peritoneum. Right salpingo-oophorectomy was performed. The surgical specimen (Fig. 2A) was measured as 5000 g (including 4580 ml of pus) in weight and 30 × 23 × 20 cm in size. The outlook revealed many daughter cysts which were filled with gelatinous material. On cutting, multiloculated cyst with necrotic tissue was found in the interior part of the mass. The right fallopian tube, which measured 6 cm in length and 0.8 cm in diameter, was normal grossly. Microscopically, it showed a mucinous cystadenoma of the ovary (Fig. 2B). Most of the cystic wall was covered with fibrin-coated granulation tissue. Several areas of the abscess formation and the existence of the foaming histiocytes and foreign body giant cells were found in the cyst wall. The
Fig. 2 (A) Grossly, the removed mass was measured as 5000 g in weight and $30 \times 23 \times 20$ cm in size. The outlook revealed many daughter cysts which was filled with gelatinous materials.

Fig. 2 (B) Microscopically, a mucinous cystadenoma of the ovary was revealed from the intact part of the inner wall. (Haemotoxyline-Eosin stain, 190×).

The mesothelial surface showed markedly fibropurulent adhesion. There was no evidence of malignant change. The fallopian tube was normal microscopically.

The patient received another 2 weeks of treatment with parenteral antibiotics after operation. Her postoperative course was smooth and she was discharged uneventfully on the 30th hospital day. Throughout the whole clinical course of this patient, there was no fever (except for one day of postoperative fever), abdominal pain or any sign of intestinal or ureteral obstruction. The white blood cell count was elevated on the admission but returned to normal after the 5th hospital day.

Discussion

An ovarian abscess, which develops as an isolated lesion without simultaneous involvement of the fallopian tube, is an unusual gynecologic infection. However, a tubo-ovarian abscess occurs more frequently than isolated ovarian abscess in clinical aspect. It is difficult to distinguish between them until a laparotomy is performed. The first case of ovarian abscess was reported by Aitken in 1869. This patient died from rupture of an ovarian abscess during pregnancy and was diagnosed postmortemly. Many cases of ovarian abscesses had been reported since then and more details about this disease were well elucidated.

Three major etiologies have been proposed for ovarian abscesses. Those include: (1) bacteria have been already present around the ovary and gain access into the stroma when the ovarian capsule is damaged. (2) bacteria enter the ovary by hematogenous spreading. (3) bacteria invade the ovary by lymphatic spreading. Ovaluation may cause a natural break of the ovarian capsule. Furthermore, the ovarian capsule may be violated with a stitch, a knife blade or by blunt dissection intraoperatively. The bacteria, which colonize the genitourinary tract or seed the peritoneum in conditions of appendicitis, diverticulitis, may subsequently enter the ovary with diseased capsule. An abscess then forms and slowly expands as the bacteria multiply within the parenchyma of the ovary.
Wagner stated that an isolated ovarian abscess might develop after the manipulations of cervical dilatation, uterine curettage or salpingography. Harrison, Petterson Virata, and Niebyl et al all presented ovarian abscesses in the presence of intrauterine devices. The ovarian abscess following streptococcal tonsillitis with hematogenous spreading was reported by Black. Several systemic diseases (tuberculosis, typhoid fever) and some local disorders (parotitis, cellulitis, pelvic inflammatory diseases, rupture of follicle or corpus luteum) might complicate with ovarian abscesses. However, some cases of ovarian abscess with undetermined etiology were described.

Recent studies have shown that ovarian abscess usually contain mixed bacteria, including aerobic Gram-negative organisms and anaerobes. *E. coli, Bacteroides* species, streptococci and *Staphylococcus aureus* were the most common isolates. *Pseudomonas* species, mycobacteria and *Actinomyces* species were also identified. Group B streptococci (*Streptococcus agalactiae*), as we were isolated in this case, is one of the common bacterial flora in the female genitourinary tract. The exact cause of infection for this patient remained unclear. She had no past ill history of systemic diseases, genitourinary disorders or veneral diseases except for uterine curettage 30 years ago. Therefore, we postulate that the cause of the streptococcal ovarian abscess in our case may be an ascending infection via genitourinary tract from the procedure of uterine curettage 30 years ago.

Ovarian abscesses might complicate in the preexisting anatomical abnormalities of the ovaries, such as dermoid cysts, simple cysts and serous cystadenoma. As we known, an abscess formation resulting from an ovarian mucinous cystadenoma in this patient is the first case reported.

Usually, the clinical features of ovarian abscesses are abdominal or pelvic pain, fever, bowel habit change, frequency of micrurition, leukocytosis, anemia and elevated erythrocyte sedimentation rate. Diffuse peritonitis due to rupture of the abscess or hydrourerets with renal dysfunction because of ureteral compression might be complicated. Our patient had abdominal mass, body weight change, frequency of micrurition, leukocytosis and elevation of erythrocyte sedimentation rate on admission. However, the abundant pus accumulated in the huge abdominal mass without systemic toxic signs or any gastrointestinal disturbance was rarely seen in the previous reports. Two possibilities of mechanism for explaining this phenomenon were (1) the thick cyst-wall with heavy granulation tissue which prevented the bacterial spreading from the abscess cavity to the peritoneum or systemic circulation (2) the probable inhibition of expanded multiplication of bacteria in the abscess by unknown substance in the cystic contents.

In summary, an ovarian mucinous cystadenoma complicated with abscess formation has never been reported. We experienced such a case with unusual clinical manifestations and successful treatment with surgical removal and parenteral antibiotics. The exact portal or timing of entry for the causative microorganism and the duration of the existence of the abscess were both obscure. The probable inhibitory effect of the cystic contents on the isolated streptococci is under investigation.

References


臓瘍を伴った卵巢粘液性のう腫の1例

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我々は稀にしかみられない臓瘍を伴った卵巢粘液性のう腫を経験したので報告する。

患者は75歳の女性、最近6ヶ月間下腹部腫脹および12kgの体重減少を主訴として入院。入院時患者は平熱、軽い貧血の他に下腹部に30×35cm 大さきの無痛性腫瘤が触れた。検査所見にて白血球数10,500/mm³，血色素8.4g/dl，血沈138mm/h，コレステロール128mg/dl，トリグリセライド124mg/dl，IgG 2,680mg/dlであった。腹部超音波および腹部CTにて恥骨上部から中腹部にかけて多数の腫瘤が認められた。腫瘤の抽出液は緑黄色でコレステロール値1,320mg/dl，トリグリセライド値1,408mg/dlと高値であった。排出液を培養し，Streptococcus agalactiaeを分離した。外科手術を行い，摘出した腫瘤は20×25×30cmのもので病理検査では感染した粘液性のう腫であった。

患者は入院30日後軽快退院となった。