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Case Report

Ovarian actinomycosis mimicking ovarian malignant tumor with no history of intra-uterine device: a rare case

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Summary

Background: Pelvic actinomycosis constitutes 3% of all human actinomycosis infections, and is mostly associated with an intra-uterine device (IUD). Ovarian actinomycosis with no history of IUD is very rare. *Case Report:* A 61-year-old female presented with ovarian actinomycosis mimicking ovarian malignant tumor. The present was a very rare case of ovarian actinomycosis with no history of IUD. The patient presented with abdominal pain and mild fever for a half year. On examination, bilateral ovarian tumors suspecting ovarian malignant tumor were detected. At the operation, the authors diagnosed the patient as bilateral ovarian abscess and performed a bilateral ovarian cystectomy. The pathological examination of bilateral ovary showed ovarian abscess, and immunohistochemistry of bilateral ovary showed ovarian actinomycosis. The diagnosis was established postoperatively. *Conclusion:* Although diagnosis of ovarian actinomycosis is very difficult, especially in patients with no history of IUD, ovarian actinomycosis should be considered in case of suspecting ovarian malignant tumor with abdominal pain and fever persisting for a long interval.

Key words: Actinomycosis; Ovarian tumor; No history of intra-uterine device.

Introduction

Actinomycosis is a chronic suppurative granulomatous disease usually caused by an anaerobic Gram positive organism Actinomyces israelii [1]. The prevalence of human actinomycosis is about 5/100 000 in urban conditions and is ten times more frequent in rural area [2]. Pelvic actinomycosis constitutes 3% of all human actinomycosis infections, and is mostly associated with an intra-uterine device (IUD) [1]. To the present authors' knowledge, there was only < 20 ovarian actinomycosis cases with no history of IUD in English literature [1-6]. In previous reports, ovarian actinomycosis can mimic pelvic or intra-abdominal malignancy [1, 3].

The authors present a rare case of 61-year-old female patients with ovarian actinomycosis mimicking ovarian malignant tumor with no history of IUD.

Case Report

A 61-year-old female without a past medical history of interest developed abdominal pain six months before admission to the present hospital. She visited a local doctor and was initially diagnosed with acute colitis. Although she was treated with antibiotics and pain killers, abdominal pain did not improved. She was referred to Department of Internal Medicine of the previous hospital because of persistent symptoms and mild fever. Positron emission tomography-computed tomography (PET-CT) examination demonstrated bilateral ovarian tumor mimicking ovarian malignancy. She was referred to Department of Gynecology of the present hospital for ovarian tumor suspecting ovarian cancer. There were no prior gynecological symptoms and no history of IUD use.

General examination and vital signs were normal without mild fever. Though the abdominal pain was slight, examination was soft and non-tender. No other symptoms such an abdominal ten-

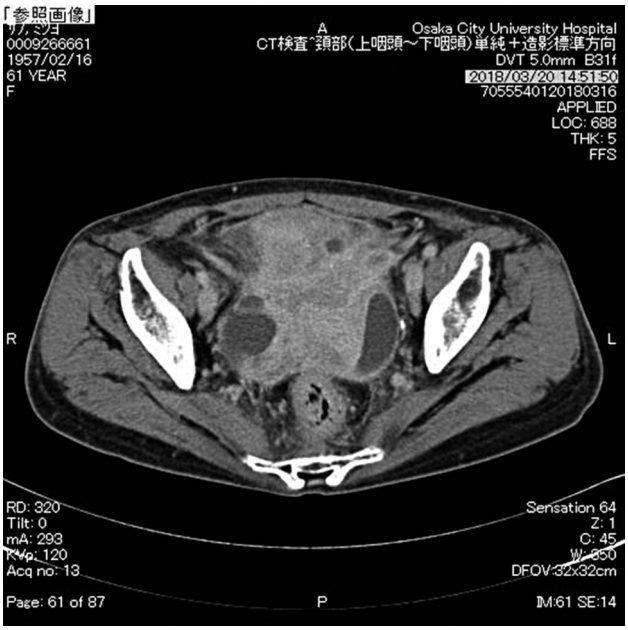

Figure 1. — The image of computed tomography (CT) examination of the abdomen, which demonstrated bilateral adnexal mass without ascites.

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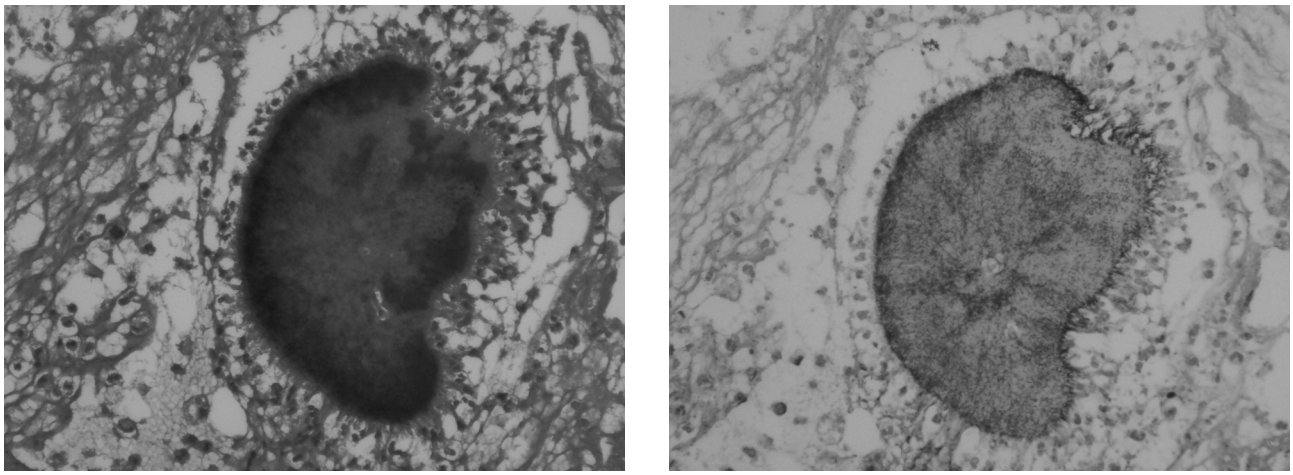

Figure 2. — Left: microscopic image of tumor cells of ovary (Hematoxylin & Eosin, ×400). Right: microscopic image of Grocott-positive tumor cells (×400).

sion, nausea or hematochezia were observed. Laboratory investigations showed inflammatory findings (white blood cell count: 9,300μL; CRP: 3.27 mg/dL). No other remarkable laboratory findings were observed. CT examination of the abdomen and chest demonstrated bilateral adnexal mass without ascites (Figure 1). MRI examination of the pelvis demonstrated bilateral adnexal cystic tumor without ascites. Tumor markers were within the normal ranges (CA125: 30 U/mL, CEA: 1.0 ng/mL, CA19-9: 2 U/mL, STN: 17.8 U/mL). The cytological examination of cervix showed no abnormality. The colon fiberscopy and photogastroscope examination was negative. Ovarian abscess and ovarian malignant tumor was initially considered the most likely diagnosis.

The patient underwent an exploratory laparotomy. Macroscopically, there were a small amount of bloody serous ascites in the peritoneal cavity. There was bilateral ovarian tumor (size: 4×4 cm) which was necrotic tumor with severe adhesion surrounding tissues including uterus, bowels, and ureter. Uterus were not detected for severe adhesion. There were no other remarkable findings without severe adhesion in the peritoneal cavity. The frozen pathological examination of the resected specimen showed chronic inflammation without malignancy. At this time, the authors diagnosed the patient with an ovarian abscess and performed a bilateral ovarian cystectomy. For massive adhesion and bleeding, bilateral salpingo-oophorectomy was not performed. Finally, the pathological examination of bilateral ovary showed an ovarian abscess (Figure 2). Immunohistochemistry of bilateral ovary showed positivity for periodic acid-Schiff (PAS) and Grocott. The authors confirmed the diagnosis of ovarian actinomycosis, which was established postoperatively.

At two weeks after operation, the patient received intravenous penicillin G for four weeks and oral penicillin V for additional six months. To date, two months after operation, the patient is alive with no evidence of symptoms.

Discussion

Actinomycosis is usually caused by A. israelii which are gram-positive, anaerobic or microaerophilic, non-spore-forming bacilli which produce sulfur granule in the tissue [1]. This is a part of endogenous microflora in the oro-pharyngeal cavity and become pathogenic in case of entering the peritoneal cavity [1]. It can also be caused by direct spread or hematologic dissemination in systemic disease, and a hard mass is produced in the pelvis [1, 6]. Pelvic actinomycosis constitutes only 3% of all human actinomycosis infections, and is mostly associated with an IUD [1]. Ovarian actinomycosis with no history of IUD is very rare. To the present authors' knowledge, there are only < 20 ovarian actinomycosis cases with no history of IUD in English literature [1-6].

The most difficult task for management of pelvic actinomycosis is to reach a diagnosis before a surgical approach [2]. Pelvic actinomycosis shows non-specific findings, and it is difficult to distinguish pelvic actinomycosis from other pelvic inflammatory diseases [1-6]. Moreover, pelvic actinomycosis can simulate pelvic malignancies in many cases because of its non-specific clinical features, with the presence of a solid invasive mass [1, 2]. There have been several reports of pelvic actinomycosis mimicking malignancies [1, 2, 6]. Since cultures of Actinomyces species show very low yield, it is difficult to distinguish a solid mass of pelvic actinomycosis from a malignant tumor before surgery [1, 2]. The diagnosis of pelvic actinomycosis is obtained during surgical exploration in most reported cases [1, 2]. In those cases, the authors noted the difficulty of a debulking surgery with very high risks to nearby structures, especially the bowel, ureter, and bladder [2]. In the present case, there was a bilateral ovarian tumor with severe adhesion surrounding tissues including uterus, bowels, and ureter, and uterus were not detected for severe adhesion.

The usual treatment for pelvic actinomycosis consists of high and prolonged doses of penicillin G or amoxicillin for four to six weeks, followed by penicillin V orally for six to 12 months [1-6]. Clindamycin, tetracycline, and erythromycin are an alternative in cases of allergy to penicillin [6]. In the present case, the patient received intravenous penicillin G for four weeks and oral penicillin V for an additional six months. To date, two months after operation, the

patient is alive with no evidence of symptoms and complaints.

Although diagnosis of ovarian actinomycosis is very difficult, especially in patients with no history of IUD, ovarian actinomycosis should be considered in case of suspecting ovarian malignant tumor with abdominal pain and fever persisting for a long interval.

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