CASE REPORT

Ovarian Actinomycosis: A Great Masquerader Mimicking Papillary Serous Tumor of Ovary

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Abstract

Ovarian actinomycosis is a clinical mimicker of malignancy, especially papillary serous tumor, and hence ovarian actinomycosis should be in the differential diagnosis of papillary serous tumors of ovary.

Keywords: Case report, Elevated Ca-125 levels, Ovarian actinomycosis, Papillary serous tumor, Psammoma bodies.

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Background

Ovarian actinomycosis is a rare form of actinomycosis and an innocuous infection that can be treated with antibiotics. However, the diagnostic dilemma in ovarian actinomycosis is many as it is a great mimicker of malignancy, especially papillary serous tumor. Papillary serous tumor is a high-grade ovarian epithelial tumor which is the most common tumor in the reproductive age. Ovarian actinomycosis, an infectious etiology, and papillary serous tumor, a high-grade malignant tumor represents two ends of the spectrum with similar clinical and radiological features. Hence, the diagnosis of actinomycosis should be borne in mind when dealing with bilateral ovarian masses.

Case Presentation

A 41-year-old female presented with complaints of right-sided lower abdominal pain for 5 months. The pain was a dull aching nature which was gradually worsening. She had two children by normal vaginal delivery, and her last childbirth was 18 years ago. She underwent puerperal sterilization after her last childbirth. She has regular menstrual cycles. There was no history of abnormal bleeding per vaginum or micturating disturbances. There was no history of any systemic illness or major surgeries in the past. General examination revealed hemoglobin (Hb) of 10.2 gm/dL and peripheral smear revealed a microcytic hypochromic blood picture.

Systemic examination revealed right iliac fossa tenderness. Per vaginal examination revealed a firm, immobile mass measuring 5 cm × 4 cm in the right fornix and a bulky uterus. Pipelle's endometrial biopsy was performed which revealed endometrial hyperplasia without atypia showing focal secretary changes. The pelvic sonogram revealed an exophytic tumor with dystrophic calcification arising from the right corneal end adherent to the right ovary with an ovarian cyst. The left ovary was also enlarged in size. Ca-125 levels were 57 units/mL. In view of increasing pain and borderline elevated Ca-125 levels, a transabdominal hysterectomy with bilateral salpingo–oophorectomy was performed.

Intraoperatively, the whole mass was covered with peritoneum. Upon dissecting, it was found to be densely adherent to the ileum and small bowel mesentery. Extensive omental adhesions were noted in the right lateral abdominal wall with dystrophic calcifications. The intraoperative picture was that of a frozen abdomen further complicating the diagnosis. The other ovary was also enlarged with minimal adhesions.

Based on the intraoperative findings, a provisional diagnosis of a bilateral serous tumor of the ovary was suspected and the specimen was sent for histopathological evaluation. Both the ovaries were unequally enlarged and the cut section of both ovaries revealed an orange fluid oozing from tiny cystic spaces. Some areas revealed focal calcifications (Fig. 1). Microscopic examination revealed bilateral ovarian actinomycosis with Splendore–Hoeppli phenomenon (Fig. 2).

Discussion

Ovarian actinomycosis is a rare chronic suppurative granulomatous disease caused by *Actinomyces israelii*. The true prevalence of pelvic actinomycosis in the world is not available in literature as the disease is rare and a great mimicker of malignancy.[1] Cases of actinomycosis are diagnosed only by histopathology and inoperable cases are easily missed. However, reports suggest the increasing prevalence of pelvic actinomycosis due to the widespread usage of pelvic intrauterine devices.[2] The prevalence of actinomycosis among

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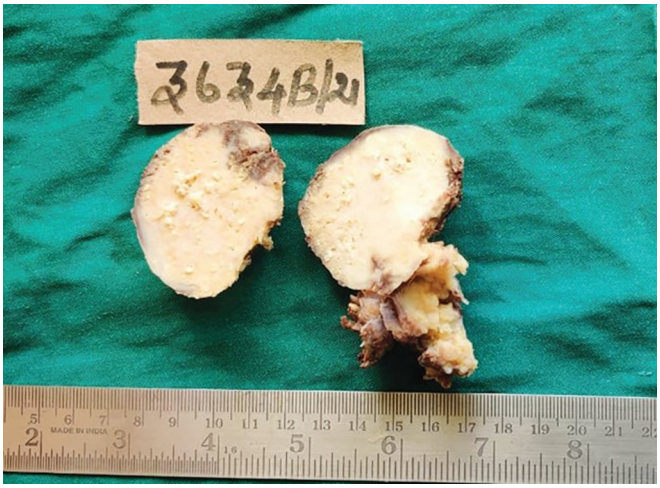

Fig. 1: Sulfur granules in ovary mimicking psammoma bodies

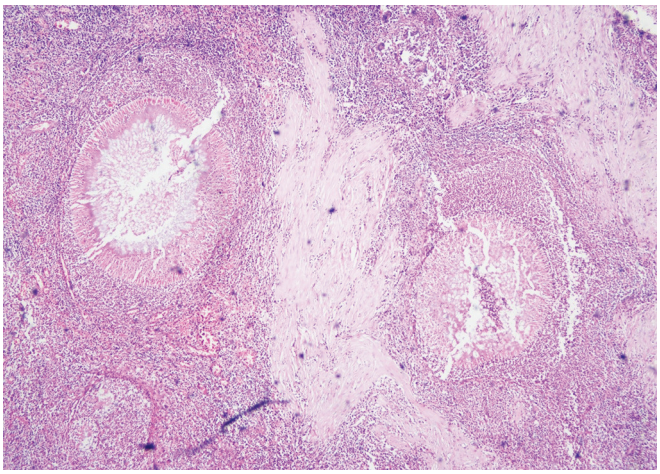

Fig. 2: Ovarian actinomycosis with Splendore–Hoeppli phenomenon

intrauterine device users varies from 1.6 to 11.6%.[3] In the present case, the patient did not have an intrauterine device and the only surgery she had was puerperal sterilization. Abdominal surgery is another risk factor for actinomycosis. Actinomycosis is a routine commensal in the urogenital tract. The infection occurs when there is injury to the mucosal barrier leading to the spread of infection into the tissue planes. Postmenopausal actinomycosis is another entity where the uterus is infested with actinomycotic colonies and is unable to shed them.

As the symptoms of ovarian actinomycosis are nonspecific and vague, it is easily misdiagnosed as malignancy in clinical examination and radiology imaging. The most common symptom of ovarian actinomycosis is vague abdominal pain due to adhesions and sinus tract formations. Our patient's clinical examination suggested a tubo-ovarian mass which is the most common presentation. Then the abdominal sonogram revealed bilateral ovarian enlargement with dystrophic calcifications which was confused with bilateral serous ovarian tumor. The elevated Ca-125 levels supported the diagnosis. In one study, the Ca-125 levels were elevated in 4 out of 5 cases of pelvic actinomycosis. The positive predictive value of Ca-125 in diagnosing ovarian cancers is 57.4%.[4] Hence, it is imperative to have a differential diagnosis of ovarian actinomycosis in cases with elevated Ca-125.

Papillary serous tumors are the most common malignancies of the ovary. More than 60% of papillary serous carcinomas are bilateral and psammoma bodies are common papillary serous tumors. Our case had an interesting bilateral presentation with unequal enlargement of both ovaries with sulfur granules mimicking psammoma bodies in gross examination. So, a low-grade papillary serous tumor was thought of in the gross differential diagnosis. Only histopathology revealed the final diagnosis of ovarian actinomycosis with Splendore–Hoeppli phenomenon.

Conclusion

This case highlights the masquerade nature of ovarian actinomycosis as the disease was not suspected right from clinical examination till gross examination. Only histopathology yielded the final diagnosis. Our case was unique as she was a healthy reproductive-age-group female who did not have intrauterine devices, had no recent abdominal surgeries, and had a normal menstrual history. The elevated Ca-125 and bilateral ovarian enlargement with dystrophic calcified areas also pointed to the diagnosis of a serous ovarian tumor. The only limitation of this report was the non-availability of intraoperative frozen section which could have clinched the diagnosis peroperatively.

Hence, ovarian actinomycosis is a real masquerade of malignancy and this differential diagnosis should be in mind when dealing with such cases.

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References

1. Han Y, Cao Y, Zhang Y, et al. A case report of pelvic actinomycosis and a literature review. Am J Case Rep 2020;21:e922601-1–e922601-1. DOI: 10.12659/AJCR.922601.
2. Nakahira ES, Maximiano LF, Lima FR, et al. Abdominal and pelvic actinomycosis due to longstanding intrauterine device: A slow and devastating infection. Autops Case Rep 2017;7(1):43–47. DOI: 10.4322/acr.2017.001.
3. Fleckenstein C, Jiang X, Parthasarathy KN. Vaginal Actinomycosis in a female without a history of intrauterine contraception: A case report. J Minim Invasive Gynecol 2021;28(11):S158. DOI: 10.1016/j.jmig.2021.09.325.
4. Sastra WI, Aditya PP, Gradiyanto OE, et al. Predictive value of preoperative inflammatory markers and serum CA-125 level for surgical outcome in Indonesian women with epithelial ovarian cancer. Cancer Biomark 2022;34(1):123–129. DOI: 10.3233/CBM-201415.