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Case Report

Tubo-ovarain abscess in patient with ovarian endometriosis

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ABSTRACT

Tubo-ovarian abscess (TOA) is a sequela of pelvic inflammatory disease (PID) found in 15-34% of patients, is comprised of an infectious, inflammatory complex encompassing the fallopian tube and ovary. We are presenting a case of TOA with endometriosis in a patient who underwent total abdominal hysterectomy and bilateral salpingo-oophorectomy. Histopathological findings were compatible with endometriosis with xanthogranulomatous salpingitis and oophoritis. In our patient there was no history of any chronic infection, gynecological procedures or intra uterine device and single partner. The purpose of this case is to make aware of this condition and requirement of further studies to investigate the risk of TOA in patients with endometriosis to find out the exact cause to prevent unnecessary surgery at later stage.

Keywords: Fallopian tube, Ovary, PID, TOA

INTRODUCTION

Tubo-ovarian abscess (TOA) is a sequela of PID found in 15-34% of patients, is comprised of an infectious, inflammatory complex encompassing the fallopian tube and ovary. The proposed pathophysiological mechanism for TOA development includes ascending infection as well as hematogenous and lymphatic routes.[1,2]

PID and TOA occur more frequently and are more severe in women with endometriosis than in those without endometriosis (yang). A history of associated PID, use of intrauterine contraceptive device (IUCD), transvaginal invasive procedures like oocyte retrieval (OR) for *in vitro* fertilization (IVF), and endometrioma aspiration increase the risk of developing a TOA in these patients. The infected tube serves as a portal of infection to the endometrioma and the collected blood serves as a culture medium.[3,4] We are presenting a case of TOA with endometriosis.

CASE REPORT

A 40-year-old female presented with abnormal uterine bleeding on and off for 3 years. She was a known case of hypothyroidism on treatment (100 µg thyroxine). Patient had two full term vaginal delivery. She had history of dysmenorrhea since menarche. On examination, she was afebrile, her pulse rate-80 bpm and blood pressure 120/80 mmHg. Ultrasound scan revealed cystic endometrial hyperplasia with endometrial thickness 18 mm and large intramural fibroid present in lateral wall of uterus. Right ovary was enlarged and contain cyst measuring 10×20 mm in size. Patient underwent total abdominal hysterectomy and bilateral salpingo-oophorectomy.

Histopathological findings

Macroscopy

The uterus measured 6×4×3 cm in size. On cut open thickness of endometrium and myometrium were 0.8 and

2.2 cm respectively with presence of single intramural nodule measuring 3.5 cm in posterior wall of uterus. Right fallopian tube measures 4 cm in length along with right ovary measuring 4×2×1.5 cm. The cut surface showed a cyst and gray white areas. Left fallopian tube and left ovary measure 2 cm and 3×2×1 cm respectively.

Microscopy

The cervix and the endometrium were unremarkable. The myometrium showed leiomyoma. Right ovary revealed endometriosis with granulation tissue and extensive inflammatory infiltrate consisting of neutrophils, eosinophils and sheets of foamy histiocytes. Left ovary also showed granulation tissue and acute inflammatory cell infiltrate. There was no evidence of a neoplasm. Both fallopian tubes showed chronic inflammation in subepithelial tissue. Features were compatible with endometriosis with xanthogranulomatous salpingitis and oophoritis.

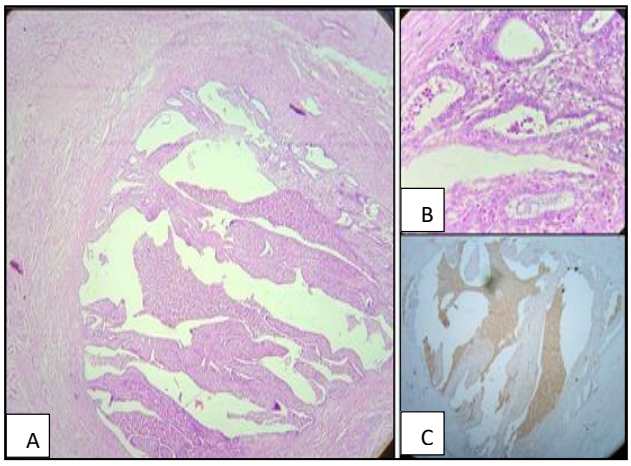

Figure 1 (A-C): Microsection revealing endometrial glands and stroma in ovary (H and E 100X and 400X) IHC marker CD10 confirmed the presence of endometrial stroma (100X).

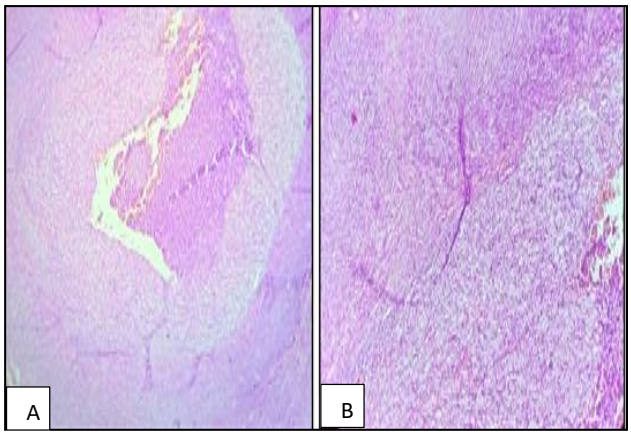

Figure 2 (A and B): Area of abscess and necrosis with sheets of foamy macrophages in ovarian tissue (H and E 100X and 400X).

DISCUSSION

Ovarian endometriosis is a common benign gynecological disease, but a secondary TOA formation is rarely reported. These patients with Ovarian endometriosis are more susceptible than the general population to TOA. Possible pathogenic mechanisms are as follows. (i) Altered immune environment seen with ectopic endometrial glands and stroma (ii) systemic immunological aberrance (iii) altered menstrual blood is an ideal culture medium that facilitates bacterial growth (iv) The "bacterial contamination hypothesis" states that the incidence and occurrence of intrauterine microbial colonization and endometritis are significantly higher among women with endometriosis, especially after gonadotrophin-releasing hormone agonist treatment (v) Haematogenous and lymphatic spread of infection due to urinary tract infection, appendicitis, diverticulitis, tonsillitis, and tuberculosis (vi) Weakened cystic wall of an endometrioma.[3-6]

There is increase in OE-TOA risk after lower genital tract infection because the cervical mucosal barrier is impaired during pathogenic microorganism infection; hence, infection can spread along the endometrium to other pelvic organs such as the fallopian tubes as well as the ovaries.[4] Previous surgical procedures involving the pelvic organs have been found to increase the risk of tubo-ovarian abscess formation in the patients with the endometriosis.[7]

In study done by Mabrouk et al found that preoperative hormone intervention can shrink the endometriosis lesion and reduce inflammation through ovarian inactivation, down-regulate cell proliferation, and increase the apoptosis of endometriosis tissues.[8]

Tas et al found that endometriosis with TOA is not only seen in reproductive period but also in menopause, more prevalent than expected for normal population. They concluded that this condition can be explained with the view that support endometriosis is now considered to be a disease of both endocrine as well as immune dysregulation.[9-11]

In our patient there was no history of any chronic infection, gynecological procedures or intra uterine device and single partner. Only positive history was hypothyroidism an immune disorder may be the possible reason for infection in ovary with endometriosis.

More studies are required to investigate the risk of tubo-ovarian abscess in patients with endometriosis to find out the exact cause to prevent unnecessary surgery at later stage.

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