

## Pelvic actinomycosis: a rare entity presenting as tubo-ovarian abscess

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**Abstract** A 24-year-old woman having two children using an intrauterine contraceptive device was admitted with lower abdominal pain and fever. On clinical and radiographic examination revealed a  $7 \times 6$  cm multi-loculated cystic mass in the lower abdomen. The differential diagnosis included twisted ovarian cyst, ectopic pregnancy, tubercular tubo-ovarian (TO) mass red degeneration fibroid, diverticular diseases, emphysematous cystitis, pelvic malignancy, and mesenteric cyst. On histologic examination, an actinomycotic TO abscess was found with sulfur granules.

**Keywords** Actinomycosis · Intrauterine device (IUD) · Tubo-ovarian (TO) abscess

### Introduction

Actinomycosis is a chronic bacterial disease caused by a gram-positive, pleomorphic non-spore forming, non-acid fast anaerobic or microaerophilic bacilli of the genus *Actinomyces* and the order Actinomycetales. The disease is characterized by localized swelling with suppuration,

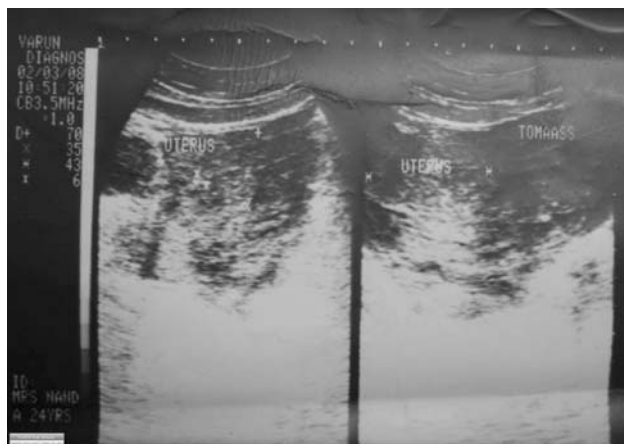
abscess formation, tissue fibrosis, and draining sinuses. *Actinomyces* are very closely related to *Nocardia* species; both were once considered to be fungal organisms. Pelvic actinomycosis is uncommon and usually represents a complication of an intrauterine device (IUD) [1]. This organism is very difficult to culture, and most actinomycosis is actually identified by histologic features in pathologic specimens or by cytologic features on Papanicolaou smears. A specific fluorescent antibody stain is also available. Tubo-ovarian abscess is usually polymicrobial with a preponderance of anaerobic organisms and the exact role of actinomycosis in the abscess formation remains to be unclear.

### Case report

A 24-year-old woman using IUD for last 6 months having two children was admitted to our hospital with lower abdominal pain and fever. The patient had a pelvic mass clinically and radiographically. Abdominal-pelvic echogram showed evidence of an enlarged right adnexum as well as that of the homolateral tube, but no discharge of fluid in the pelvic cavity. Ultrasonography demonstrated a  $7 \times 6$  cm multi-loculated cystic mass in her lower abdomen (Fig. 1). Gynecological examination in the patient excluded lesions in the portio or vagina and the vaginal flora was normal. Diagnostic laparoscopy was done showing a large para-uterine tumefaction (tumor-like swelling). The pelvic organs were adhering to the parietal layer of the peritoneum and in the whole peritoneal cavity, including the interhepatic diaphragmatic space, fibrin plaque, and pus was observed. During the laparotomy, a parauterine mass and tubo-ovarian complex with numerous recesses containing fetid, grayish pus was found. Complete right adnexectomy was performed with abundant lavage, which improved the

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**Fig. 1** Ultrasonography showing tubo-ovarian mass

abdominal condition. The drained liquid showed the presence of cutaneous bacterial flora, but no fungi or parasites. Ovarian actinomycotic abscess with acute peritonitis and salpingitis was demonstrated. Subsequent antibiotic therapy consisted of extended spectrum  $\beta$ -lactam antibiotics for 15 days, and 4 months after the episode the patient was well without return of the foci of infection.

## Discussion

Female genital tract is a relatively rare site for pelvic actinomycosis and the condition is often unsuspected clinically. Traditionally, actinomycosis of the female genital tract has been thought to originate from ascending infection of the bacteria. The association between IUD and pelvic actinomycosis was first described around 1970 [2] and is now well documented [3]. It is more common in plastic IUDs. Pelvic actinomycosis may also spread from intestinal

infection, usually from indolent ileocecal disease. This condition is rare in children. Patients present with an indolent history of vaginal discharge, abdominal or pelvic pain, menorrhagia, fever, weight loss, and prolonged use of an IUDs [4]. Eighty percent of cases of pelvic actinomycosis in IUD users have been reported in women not changing IUDs for at least 3 years. We would strongly recommend that any IUD be removed should it be associated with actinomycosis on genital smears and/or culture. If sepsis is also apparent, IUD removal with the use of long-term antibiotics is required. Most cases are diagnosed histologically by identification of an actinomycotic grain in the center of the abscess or by cytologic features on Papanicolaou smear [5]. In conclusion, we suggest that in women presenting clinically with vague abdominal symptoms, backache, and vaginal discharge, actinomycosis should be considered and ruled out with the help of cytologic and proper microbial culture methods. Once the diagnosis is established, the infection can be treated with good results with broad-spectrum antibiotics. It is also imperative to look for other sites for actinomycosis which were clear in our case.

**Conflict of interest statement** None.

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