

## Pelvic Actinomycosis Causing Acute Abdominal Pain in an Elderly Patient in the Postmenopausal Period

### Postmenopozal Dönemdeki Yaşlı Hastada Akut Batın Tablosuna Yol Açan Pelvik Aktinomikoz Olgusu

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#### SUMMARY

*Pelvic actinomycosis, which is a rarely seen disease, is caused by an anaerobic gram-positive organism, Actinomyces israelii, and usually occurs in patients with intrauterine device. It is chronic, granulomatous, suppurative and prone to fistulization. A 73-years-old patient with acute abdominal pain was operated, and perforated left tubo-ovarian abscess was seen. In the operation, left salpingo-oophorectomy, partial omentectomy and appendectomy were performed. She had diabetes mellitus type-2, which is a risk factor. She had no history of vaginal tablet use and was treated with penicillin for a long period. We aimed to discuss a pelvic actinomyces case seen in the eighth decade of life, without use of intrauterine device, and which resulted in pelvic peritonitis.*

**Key Words:** Actinomyces, Intrauterine devices, Pelvic pain

#### ÖZET

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*Pelvik aktinomikoz anaerob gram-pozitif bir mikroorganizma olan Actinomyces israelii tarafından oluşturulan, genellikle intrauterin araç kullananlarda görülen kronik, granülatöz, süpüratif ve fistüleleşme eğilimi olan oldukça nadir bir hastalıktır. Yetmiş üç yaşında akut batın tablosu ile operasyona alınan hastada perfor sol tubaovaryan apse tespit edildi. Sol salpingooferektomi, parsiyel omentektomi ve apendektomi yapıldı. Risk faktörü olarak tip 2 diabetes mellitus mevcuttu. Vajinal tablet veya ovul kullanım öyküsü olmayan hastaya uzun süreli penisilin ile tedavi düzenlendi. Bu yazıda 70'li yaşlarda çok nadir görülen, intrauterin araç bulunmayan ve pelvik peritonit tablosu oluşan pelvik aktinomikoz olgusunun tartışılması amaçlandı.*

**Anahtar Kelimeler:** Aktinomikoz, Intrauterin araçlar, Pelvik ağrı

## INTRODUCTION

Pelvic actinomycosis is a chronic, granulomatous, suppurative disease caused by an anaerobic gram-positive microorganism called *Actinomyces israelii* and is usually seen in patients with intrauterine device (IUD)<sup>[1]</sup>. Pelvic actinomycosis is quite rare and patients are usually 20-40 years old<sup>[1]</sup>. Actinomycosis in humans was first described in an autopsy performed in Israel in 1878<sup>[2]</sup>. In 1973, Henderson noticed the relation between pelvic actinomycosis and IUD use. It is a commensal component of oropharynx, gastrointestinal and vaginal flora but can not cause an infection because of the mucosal barrier. Trauma and surgical intervention can cause infection. Necrotic tissues and external materials facilitate the development of infection<sup>[3]</sup>.

## CASE

A 73-years-old woman admitted to the Emergency Department of Taksim Training and Research Hospital with severe abdominal pain. The patient had been diagnosed with type 2 diabetes mellitus 16 years before. On physical examination, defense and rebound were positive. In transvaginal ultrasonography, endometrium double layer was 3 mm, and in fundal region, 8 x 2 mm hypoechoic area was reported. Neither ovary was visualized. When diagnostic laparotomy was performed, perforated abscess focus in the left ovary was seen. There were diffuse 0.5-1 cm-sized nodules on the surface of the ovary, uterine tube and omentum. Some purulent fluid was seen in the abdomen. Left salpingo-oophorectomy, appendectomy and partial omentectomy were performed.

Histopathological observation was reported as tubo-ovarian actinomycosis. Both resection materials of the left salpingo-oophorectomy and partial omentum showed chronic inflammation with actinomycosis abscess formation. Pathogen microorganisms were seen as sulphur granules surrounded by lymphocytes.

The patient was treated with crystalized penicillin. Four weeks after initiation of treatment, oral penicillin was started instead and has been used for 12 months.

## DISCUSSION

The three main regions for the occurrence of actinomycosis infection are the cervicofacial, thoracic and abdominal regions. Even though thoracic localization ranks second in frequency, some authors have indicated an increase in abdominopelvic involvement due to the increase in IUD use. Compact granulation tissue, abscesses and fistulae formation are associated with pelvic-abdominal infection. Sulphur granules caused by conglomerated actinomycosis colonies inside the amorphous matrix are seen in the purulent material. These granules are strongly evident but not pathognomonic. Infiltration of inflammation cells inside the cross-cuts of tuba epithelium and ovary and microorganisms with hypha-like structures were seen (Figure 1). Pelvic actinomycosis can occur in 1/100.000 and can cause endometritis, pelvic inflammatory disease and pelvic abscess, and rarely includes the intestines, bladder, abdominal wall or retroperitoneum. Systemic abscesses that affect the liver, cerebrum or lungs can develop. Pelvic actinomycosis occurs via spread of microorganisms through an ascendent route after perineal infection or orogenital contact. Presence of IUD has an important role in the pathogenesis. Our case was interesting because she had no history of IUD use. In patients with IUD, actinomycosis can be shown at a ratio of 7% (0-31) by cervicovaginal smear or immunofluorescence. In these patients, routine pap smear is very important because in cases with pelvic abscess caused by actinomycosis-like organisms, unnecessary surgical interventions can be avoided. Our case had to be immediately operated for acute

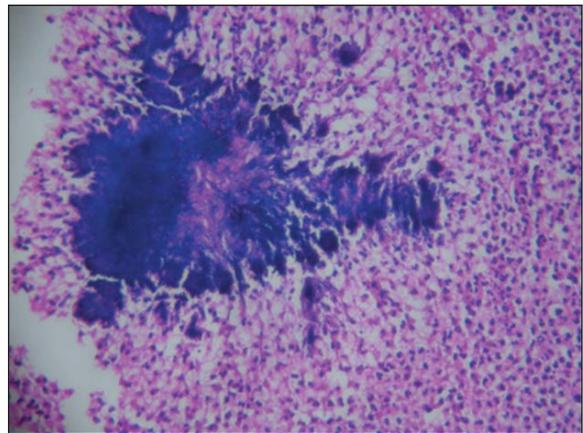


Figure 1. Histiocytic inflammatory reaction and sulphur granules in ovary tissue.

abdominal pain so we were unable to perform the pap smear. Symptoms of pelvic actinomycosis can be summarized with three features: pelvic pain syndrome, impaired general appearance and infection syndrome. Eighty-five percent of cases have low quadrant localized pain, 44% have weight loss and 24% have vaginal discharge. Our case had acute abdominal pain and loss of 3 kg in the previous month. These could be suggestive of a tumor. There are some cases in the literature who have been operated with the diagnosis of ovarian, uterine or colorectal tumors. Powell et al. indicated that advanced stage actinomycosis imitated a malignant tumor in one of their cases with pelvic mass, colonic stricture and bilateral ureteral obstruction<sup>[4]</sup>. After 5 weeks of medical treatment, the mass was lost sonographically. Anemia is seen in 70% of patients, and leukocytosis and increased erythrocyte sedimentation rate (ESR) are seen in 76% of the patients<sup>[4,5]</sup>. Physical examination is not useful except in manifest pelvic abscess and fistulae of the skin. Our case had anemia and increased ESR but no leukocytosis. Presence of type 2 diabetes was assessed as a risk factor.

It is difficult to define actinomyces bacteriologically. Diagnosis is mainly histological. Grocott-Gomori methenamine-silver nitrate stain is recommended. Pelvic actinomycosis can show a wide clinical spectrum from asymptomatic state to malodorous vaginal discharge or to severe pelvic abscess. Hwang et al. presented a 44-years-old woman with IUD with a tubo-ovarian abscess pathologically confirmed to be actinomycosis and ultrasonography showed that the IUD was imposed on an apparently degenerated myoma<sup>[6]</sup>. After the discovery of antibiotics, despite the common practice of surgical approach in the past, actinomycosis has been accepted as a disease that can be treated medically. If medical treatment fails, and intestinal obstruction, acute abdominal pain

or necessity of abscess drainage occurs, surgery should then be considered. High dose intravenous penicillin G (18-24 million unit/day) should be the first choice and should be used for 4-6 weeks. Oral penicillin should be used subsequently for 6-12 months. Ceftriaxone, tetracycline, erythromycin and clindamycin are alternatives to penicillin<sup>[5]</sup>.

In conclusion, this report is important for its evaluation of the clinical spectrum and treatment modalities of pelvic actinomycosis without the presence of IUD.

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