# Primary Pelvic Tuberculosis That Mimics Ovarian Cancer: A Case Report

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Due to the lack of specific clinical and radiological signs, it is difficult to differentiate genital tuberculosis from ovarian carcinomas and gastrointestinal diseases. Radiological evaluation and increased level of Ca125 may lead to misdiagnosis of disseminated ovarian cancer. A 30 year old women with the complaints of menstrual irregularity, abdominal pain and elevated levels of Ca-125, was evaluated for ovarian cancer. Pelvic magnetic resonance imaging showed minimal ascites fluid and multiple cysts in the right ovary. Intra-operative frozen-section analysis was performed on right paratubal mass and bilateral salphinx. As a result of the frozen-section analysis, granuloma that contained caseous necrosis was reported as tuberculosis. Bilateral salpingectomy, right paratubal mass extirpation and bilateral ovarian tubal tuberculosis. Surgeons should consider genital tuberculosis in the differential diagnosis by avoiding large surgical procedure and intra-operative frozen-section analysis should be done to prevent overtreatment.

**Key Words:** Pelvic tuverculosis, Ovarian cancer, Ca 125

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## Introduction

Genital tuberculosis is one of the most ancient diseases that affect the humanity. Although female genital tuberculosis is a rare disease in developed countries, it is one of the most commonly encountered reasons for chronic pelvic inflammatory disease and infertility in the developing countries.[1]

Due to the lack of specific clinical and radiological signs, it is difficult to differentiate genital tuberculosis from ovarian carcinomas and gastrointestinal diseases. Radiological evaluation and increased level of Ca125 may lead to misdiagnosis of disseminated ovarian cancer. As physical examination, radiological evaluation and laboratory analyses are not enough to differentiate genital tuberculosis and ovarian cancer, it may cause difficulty of diagnosis, unnecessary intervention and increased morbidity.[2,3]

Especially in young patients with ascites and increased level of Ca125, intra-operative frozen-section analysis avoids unnecessary large surgical interventions.

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In this case report, we present a case that was planned to be operated with a pre-diagnosis of pelvic malignancy and who was diagnosed with primary tubal tuberculosis.

## Case Report

A 30-years-old multigravid patient was referred to our polyclinic of gynecology with the complaints of menstrual irregularity and abdominal pain that she has experienced within the last 6 months.

The patient had a normal medical and familial history. She had no fever, chill, cough and nocturnal sweating. Her physical examination was normal, except the finding of bilateral abdominal sensitivity. Her chest X-ray was normal. In her laboratory tests, white blood cell counts were 6300/mm$^3$, erythrocyte sedimentation rate was 20 mm/hour, CRP was <3.36 mg/dl and Ca125 measurement was 260 U/ml. Abdominopelvic ultrasonographic evaluation revealed minimal ascites and a mass of approximately 6 cm, with solid and cystic area, in the right adnexial region. Pelvic magnetic resonance (MR) imaging showed minimal ascites fluid and 47x37x57 mm multilocule cyst in the right ovary (Figure 1).

During the operation, abdominal examination showed approximately 200 cc ascites in the rectouterine cavity, cysts of 3x3 cm in the right ovary and of 2x2 cm in the left ovary, bilateral hydrosalphinx and right paratubal cystic lesion of 6x6 cm. The mass was observed to contain a viscous, white and granulomatous material. In addition, it was observed that bi-

lateral tubes, ovaries and the liver were highly adhered to abdominal wall and to uterus. Intra-operative frozen-section analysis was performed on right paratubal mass, ovarian cysts and bilateral salphinxes. As a result of the frozen-section analysis, granuloma that contained caseous necrosis was reported as tuberculosis. Bilateral salpingectomy, right paratubal mass extirpation and bilateral ovarian reconstruction were performed. M-tuberculosis test, which was done using acido-resistant bacilli staining from the mass and polymerase chain reaction, had a positive result and microorganism was identified as mycobacterium tuberculosis. M-tuberculosis culture from the sputum and mass had a negative result. Final pathology report reported a granuloma that contained caseous necrosis described as primary tubal tuberculosis.

The patient was initiated to be treated with quadruple anti-tuberculosis therapy (isoniasid 300 mg/day, ethambutol 1.5 g/day, rifampicin 600 mg/day, morphosinamid 30 mg/kg/day). The patient was discharged at 5$^{th}$ post-operative day with quadruple anti-tuberculosis therapy.

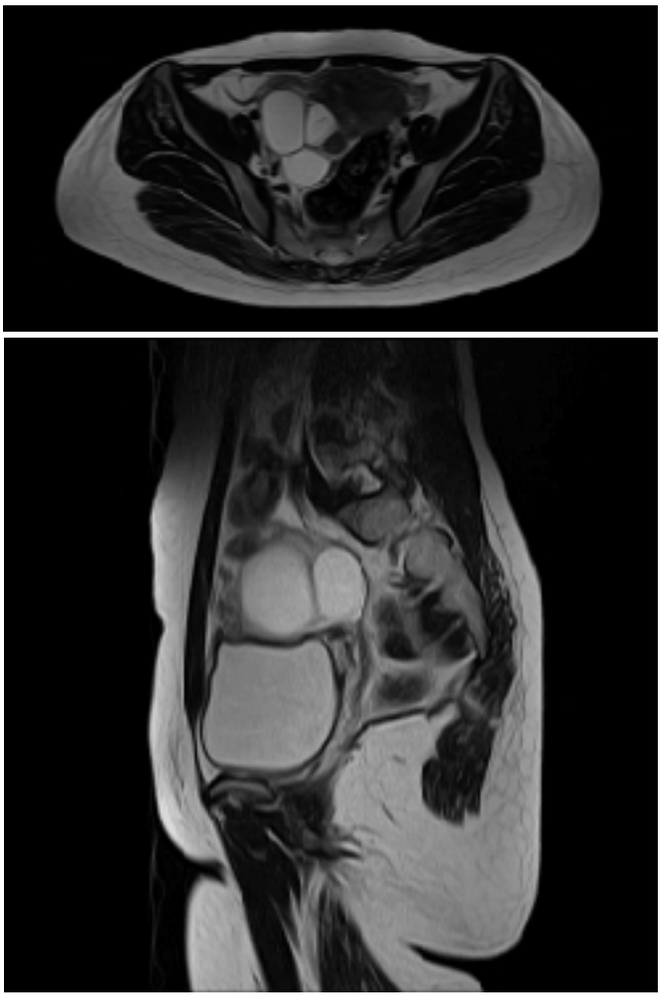


*Figure 1: Magnetic resonance images of patient showing right adnexial mass*

## Discussion

Tuberculosis is a disease that results to death of 3 million people per year and, in developing countries, it has an increasing incidence and is one of the important reasons of female infertility. Due to increased immigration from developing countries and increased size of HIV-infected population, World Health Organization reported the tuberculosis as an emergency case in 1990s.[1] As at least 11% of the patients are asymptomatic and the diagnosis is accidentally made, it is difficult to determine the real incidence of female genital tuberculosis (FGT). In post-mortem studies, the incidence of FGT was found to be 4-12%.[2] Contrarily to Western countries, in Turkey, tuberculosis is more commonly seen in the age group of 15-44 years (64%). The incidence of female genital tuberculosis was reported to be 0.3-1.3%.[3]

Although female genital tuberculosis often primarily involves the lungs, tubercle bacillus may be spread to genitourinary tract, abdominal cavity, meninx and to lymphoid tissue in 1/3 of the cases. It is estimated that 5-13% of the patients with pulmonary tuberculosis develop genital tuberculosis. Among genital organs, the incidence of involvement was 95-100%, 20-60% and 20-30% for fallopian tubes, endometrium and ovaries, respectively.[2]

In the patients with FGT, the presenting symptoms generally include lower abdominal and pelvic pain, menstrual irregularity, infertility and ascites.[4,5] In post-menopausal women, FGT should be suspected in the presence of post-menopausal bleeding, persistent leucorrhea, and pyometra.[6,7] In a study performed in Iran on 3088 cases of tuberculosis, 46 cases with genital tuberculosis were detected. In 31 of 46 cases in whom genital tuberculosis has been detected, the presenting symptom was infertility.[8] In our case, the presenting symptom was menstrual irregularity and abdominal pain.

It is difficult to diagnose the female genital tuberculosis without the use of surgical procedures and invasive methods. In our case, the presence of adnexial mass and increased levels of Ca125 resulted to the misdiagnosis of ovarian cancer. Sensitivity of Ca125 level is lower in the premenopausal women. This level may be increased in some benign conditions, such as endometriosis, adenomyosis, pelvic inflammatory disease and adhesions.[9]

Genital tuberculosis may be confirmed using ultrasound, CT and MRI. In the ultrasound, for the characterization of genital tuberculosis, the clinician should be alert for adnexial mass that contains loculated ascites, bilateral and predominantly solid, small calcifications, thickened omentum, thickened peritoneum and endometrial involvement.[10]

Taşova et al. reported the isolation of the bacillus from ex-

ternal focus as a diagnostic criterion in the extrapulmonary tuberculosis.[11] In the diagnosis, minor criteria include positive tuberculin skin test, positive acidoresistance staining, the demonstration of proliferative granulomatous caseous necrosis in the tissue biopsy, clinical findings and healing with anti-tuberculosis therapy. The presence of 2 minor criteria is sufficient for the diagnosis.

Modern anti-tuberculosis drugs are the initial therapy of choice for the treatment of genital tuberculosis. The patients, who are refractory to the therapy, should be evaluated using endometrial curettage 6-12 months after the initiation of the therapy. In the patients who show persistent or recurrent disease despite 6-month appropriate treatment and in those with multiple drug resistance, surgery is indicated.

Clinician should be on alert for genital tuberculosis in the presence of pelvic inflammatory disease that does not respond to standard antimicrobial therapy, in the endemic of tuberculosis, in the presence of a positive familial history, in the cases of infertility with unknown reason and in young patients with mass and ascites. Surgeons should consider genital tuberculosis in the differential diagnosis by avoiding large surgical procedure and intra-operative frozen-section analysis should be done to prevent overtreatment.

## Over Kanserini Taklit Eden Primer Pelvik Tüberküloz: Olgu Sunumu

Nonspesifik klinik ve radyolojik bulguları olmaması nedeniyle genital tüberkülozu, over kanseri ve gastrointestinal hastalıklardan ayırt etmek zordur. Radyolojik değerlendirme ve artmış ca 125 seviyesi yanlış dissemine ovaryan kanser tanısına neden olabilir. 30 yaşında, 6 aydır menstrual düzensizlik ve abdominal ağrı şikayeti olan ve Ca 125 ölçümü yüksek tespit edilen hasta over kanseri açısından değerlendirildi. Pelvik MR görüntülemesinde sağ overde multiple kistler ve minimal asit mayii izlendi. İntraoperatif sağ paratubal kitle ve bilateral salfenkslerden frozen çalışıldı. Frozen sonucu kazeöz nekroz içeren granülom, tüberküloz olarak bildirildi. Bilateral salfenjektomi, sağ paratubal kitle ekstirpasyonu ve bilateral ovaryan rekonstriksiyon yapıldı. Nihayi patoloji raporu tubal tüberkuloz olarak bildirildi. Cerrahlar geniş cerrahi prosedürden kaçınarak genital tüberkülozu ayırıcı tanıda düşünmeli ve gereksiz müdahaleleri engellemek için inraoperatif frozen section değerlendirmesi yapılmalıdır.

**Anahtar Kelimeler:** Pelvik tüberküloz, Over kanseri, Ca 125

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