

Female Genital Tuberculosis: Five Case Reports

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Abstract

Female genital tuberculosis (FG-TB) is an important disease leading to substantial morbidity including infertility and abnormal vaginal bleeding. While the incidence of FG-TB is < 1% in a developed area, its incidence is >1% in developing countries. Due to its subtle presentation, many cases are overlooked and diagnosed incidentally. Accordingly, the actual incidence of FG-TB is unknown. The definitive diagnosis of the disease is based on histopathological or microbiological examination but in most cases, the bacteriological test is overlooked. In addition, there is no specific laboratory or imaging evaluation to distinguish FG-TB from others. The first step in the diagnosis of FG-TB is suspicion of the disease. In the case of infertility, FG-TB should be included in the differential diagnosis in developing countries after excluding other common diseases and tissue biopsy should be sent for not only histopathology but also microbiological investigations.

Keywords: Female genital, infertility, tuberculosis

INTRODUCTION

Tuberculosis (TB) is an infectious disease that can be involved in any part of the body such as the kidney, spine, brain, and genitourinary organs. Female genital TB (FG-TB) is an important disease leading to substantial morbidity, including infertility and abnormal vaginal bleeding. While the incidence of FG-TB is <1% in a developed area, its incidence is more than 1% in developing countries.^[1,2] In Turkey, female genitourinary TB is estimated to be 5.7%.^[3] In endemic countries, infertility is the main complaint and nearly 5% of females applying to subfertility clinics have been estimated to be FG-TB.^[4,5] Although other common symptoms are abnormal vaginal bleeding and chronic lower abdominal/pelvic pain, 25%–35% of FG-TB present with no complaint. Therefore, due to its subtle presentation, many cases are overlooked and diagnosed incidentally. Accordingly, the actual incidence of FG-TB is unknown.^[6,7] Here, we report five cases of FG-TB in an endemic country.

Article History:

Submitted: 30 June 2020

Revised: 09 September 2020

Accepted: 14 September 2020

Published: 30 January 2021

CASE REPORT

A total of five patients were diagnosed with FG-TB in the past 20 years at the department of gynecology. They were referred to us with pathology reports. For TB, smear microscopy, culture, and polymerase chain reaction (PCR) were not sent from biopsy materials in any case. Preoperatively, medical history was not taken for TB. On admission to our unit, detailed anamnesis and physical examination were taken. Later, purified protein derivative (PPD) and chest X-ray were performed. Based on these results, all patients were diagnosed.

The mean age was 35 years (range, 26–44). The most common presenting symptoms were infertility; three patients had secondary infertility, the others had primary infertility. Two cases with secondary infertility had pelvic pain in a case and irregular vaginal bleeding in the other one. Only one patient had a previous history of extra-genital TB. Three cases had a

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Access this article online

Quick Response Code:



Website:
www.e-gmit.com

DOI:
10.4103/GMIT.GMIT_25_20

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How to cite this article: Kaya A, Kaya SY, Zerdali E, Can A. Female genital tuberculosis: Five case reports. Gynecol Minim Invasive Ther 2021;10:41-3.

positive history of TB in families. All physical examinations were unremarkable except for the third patient with pelvic tenderness. PPD test was over 15 mm in two cases. While one of five patients was obtained tubal biopsy, the remaining patients were underwent endometrial biopsy. On histopathology, the biopsy specimens revealed granulomatous endometritis in three cases and nonnecrotizing granulomatous endometritis in a case and granulomatous salpingitis in a case. Smear microscopy, culture, and PCR from biopsy materials were not performed in any case. Serologic testing for human immunodeficiency virus remained negative in all cases. CA125 levels were over the normal limit in two patients. The patients were treated with multidrug anti-TB drugs for 6–9 months. Patient characteristics are shown in Table 1.

DISCUSSION

FG-TB is an infection of reproductive age and seen in 80% of patients aged 20–40 years old.^[2] This period is considered to be the most risky time to getting infected by genital TB; According to Sutherland, the mean age was 28.2 years in a time period between 1970 and 1980.^[1] In Sweden, a study also gave similar results.^[8] Chattopadhyay *et al.* reported the mean age of 24.8 years.^[9] The age distribution is ranging from 20 to 40 to postmenopausal ages.^[10-13] In Turkey, Türkmen *et al.* noticed the mean age was 29.49 years.^[3] In the presented cases, the mean age was 35 years. While young women in developing countries are affected, it is more common among older women in developed countries.^[14] The fallopian tube and endometrium are most frequently infected and the other sites, including the cervix and ovary can be also less involved.^[5]

Infertility is the most common clinical presentation of FG-TB with 50%. This complaint was followed by lower

abdominopelvic pain in approximately 25%–50% and menstrual irregularity in 10%–40%.^[1,14] In this study, they were of reproductive age, infertility was the main symptom and all patients had either primary or secondary infertility. In most studies, about 50% of cases have normal on physical examination.^[14,15] Meanwhile, only a patient had pelvic pain in our cases. In a study from Turkey in 2012, endometrium with 69% was the most commonly involved site, followed by fallopian tubes with 10% and the most presenting complaint was infertility with 76%.^[3] These results were compatible with our cases.

Most women with FG-TB may have normal chest radiography and no prior history of TB.^[15] Approximately 20% of patients with FG-TB have a family history of TB.^[2] In this study, only one case had a previous history of TB, and three cases were negative for a family history of TB. As a tumor marker, CA125 level is elevated in more than half of advanced epithelial ovarian malignancy and this increase can also be seen in abdominopelvic TB.^[16] The marker was markedly raised in tubal involvement in our study and subsequently returned to normal levels under TB treatment.

PPD test was over 15 mm in two cases. In our study, no other organ was involved by TB. The definitive diagnosis of FG-TB is based on histopathological or microbiological examination of samples. These bacteriological tests include acid-fast bacilli smear, culture, and PCR for mycobacterium. The diagnoses of all patients were confirmed by histopathological findings of a surgical specimen, but the bacteriological examination was not performed. In a study from Turkey, similar to our cases, the microbiological confirmation was lacking in cases of FG-TB.^[3] Unfortunately, in the case of TB suspicion, a pathologist does not routinely make additional tests such as acid-fast microorganism by Ziehl-Neelsen stain. On the other

Table 1: Clinical and laboratory characteristics of all cases

	Case 1	Case 2	Case 3	Case 4	Case 5
Age	42	44	26	26	39
Complaints at presentation	Primary infertility	Primary infertility with abnormal vaginal bleeding	Secondary infertility with pelvic pain	Secondary infertility	Secondary infertility with abnormal vaginal bleeding
Prior history of TB	Negative	Negative	Negative	Negative	Positive
Familial history of TB	Yes	Yes	No	Yes	No
Clinical examination	Normal	Normal	Pelvic tenderness	Normal	Normal
Clinical material	Endometrial biopsy	Endometrial biopsy	Tubal biopsy	Endometrial biopsy	Endometrial biopsy
Histopathology	Nonnecrotizing endometritis	Granulomatous endometritis	Bilateral granulomatous salpingitis	Granulomatous endometritis	Granulomatous endometritis
AFB, culture, and PCR	Not performed	Not performed	Not performed	Not performed	Not performed
CA125 (IU/mL)	62	33	275	Not performed	Not performed
HIV serology	Negative	Negative	Negative	Negative	Negative
Tuberculin test (mm)	Not performed	16	11	32	10
Duration of TB drugs (months)	6	9	6	6	6

TB: Tuberculosis, AFB: Acid-fast bacilli, HIV: Human immunodeficiency virus, PCR: Polymerase chain reaction

hand, contrary to the histopathological examination which needs a longer time to analyze the samples, microbiological tests can also give us early results.

In conclusion, As FG-TB can present with asymptomatic and subtle clinical presentation, it is not easy to diagnose preoperatively. There is also no specific laboratory or imaging evaluation to distinguish this disease from others. The first step in the diagnosis of FG-TB is suspicion of the disease. In case of infertility, FG-TB should be included in the differential diagnosis in developing countries after excluding other common diseases and tissue biopsy should be sent for not only histopathology but also microbiological investigations.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understands that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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