

Original Article

TUBERCULOSIS OF THE FEMALE GENITAL TRACT IN IRAN

Mehrangiz Hatami MD*

Background: Considering the outbreak of different types of tuberculosis including genital tract tuberculosis in developing countries, and due to the differences in the symptoms of this disease, this study has been carried out in Imam Khomeini Hospital (affiliated to Tehran University of Medical Sciences), Tehran, Iran, for the last 20 years.

Methods: This retrospective study was conducted with fifty-two patients with the definite pathological diagnosis of genital tract tuberculosis. In this study the clinical symptoms, marital status, organ involvement, hysterosalpingography (HSG), chest X-ray, and age were variables that were all taken into consideration.

Results: The highest incidence of the disease was between the ages of 26 and 30, but the ages of the patients ranged from 17 to 80 years. The mean age was 31 years. One unmarried 17-year-old patient (2%) had no sexual activity. The other 51 patients (98%) were married. Twenty-seven (52%) patients had infertility problems for a period of between 1 and 25 years, twenty-three cases (85%) of the primary, and 4 (15%) of secondary type. In thirteen patients HSG was conducted of whom 2 cases were normal and in the remainder the fallopian tubes had been occluded. Chest X-rays in two patients showed primary pulmonary tuberculosis. The second and third symptoms of genital tract tuberculosis were abdominal pain and pelvic mass (38%), and abnormal uterine bleeding (AUB) (29%), respectively. The pathological studies indicated that the area affected in most cases was endometrium (59%). Tuberculous salpingitis counted as the second cause of pathology in these patients (34%).

Conclusion: Tuberculosis of the genital tract is more common in patients between the ages of 26 to 30 years. The most affected area is the endometrium. Infertility is the most common clinical symptom of pelvic tuberculosis even if the fallopian tubes are not obstructed. Tuberculosis should be considered in differential diagnosis of causes of infertility, pelvic mass, and AUB, particularly in areas where tuberculosis is common.

Archives of Iranian Medicine, Volume 8, Number 1, 2005: 32 – 35.

Keywords: Abnormal uterine bleeding (AUB) • infertility • tuberculosis

Introduction

Infectious diseases occupy a special place in human life. A considerable decrease in the number of deaths has occurred in many parts of the world due to proper medical treatment and technological advances. Tuberculosis is a key example of this. Although in advanced countries the incidence of tuberculosis has shown a downward trend, unfortunately rates have recently begun to increase again due to co-infection with HIV, and tuberculosis still claims many victims in

all age groups throughout the world.¹

A report of the World Health Organization shows that there are at present, 20 million tuberculosis patients in the world, of whom approximately three-quarters, that is 15 million, live in developing countries. The number of deaths resulting from this disease is about 3 million per year. At the same time the annual incidence rate of new tuberculosis cases is 2 million. Despite the fact that the methods of treatment are very well known, only one million patients are successfully treated each year.²

Although tuberculosis is one of the most common chronic infectious diseases in Iran, and genital tract tuberculosis has been known and treated for more than two centuries, the real incidence of pelvic tuberculosis in Iran is still

Author affiliation: Department of Gynecology, Shaheed Beheshti University of Medical Sciences, Tehran, Iran.

•**Corresponding author and reprints:** Mehrangiz Hatami, MD, 1235 1st Ave. Apt. 6, New York, NY 10021, USA.

E-mail: Mehrangizhatami@yahoo.com, mhnyu@noavar.com.

unknown. In this research, fifty-two patients shall be presented with the objective of providing solutions to some of the problems. Despite the different symptoms of this disease, the diagnostic methods (bacteriological and pathological), as well as medical and surgical methods, have all given the diagnosis and treatment of this disease a special status.

Materials and Methods

This retrospective study was conducted with patients with the definite pathological diagnosis of genital tract tuberculosis, admitted to Imam Khomeini Hospital during a period of 20 years. For the diagnosis of genital tract tuberculosis, caseating granuloma) was required to be present in the pathological specimens. This included the epithelial cells, giant cells, fibrosis, and proliferation of lymphocytes associated with caseous necrosis. The cases in whom caseous necrosis had not been observed were disregarded. The positive specimens and the pathological records of the patients and their medical files that were available were studied simultaneously. The necessary data were extracted from the medical files of patients and recorded in the questionnaire. They were finally converted into the desired data.

Results

The average age of the patients was 31.5 ± 1.2 years and ranged from 17 to 80 (Figure 1). All patients were housewives. One patient was 17 years old and single (2%). The other 51 patients (98%) were married. Of these, twenty-three patients (45%) had been treated for primary infertility for a period ranging from 1 to 25 years, and four patients (7%) had been treated for secondary infertility, of whom 2 had suffered from

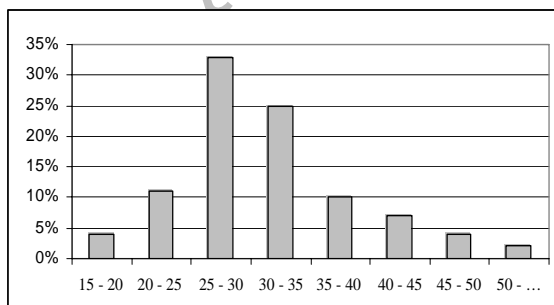


Figure 1. Age distribution of patients with genital tract tuberculosis.

infertility as a consequence of premature labor seven years before. Three patients had abortion records; one had to be laparotomized 15 days later, due to vaginal discharge, abdominal pain and fever. Adhesion of abdominal organs and pelvis were noted. The biopsy of omental and uterine lesions confirmed the tuberculous lesions. Twenty patients (38%) were admitted for abdominal pain and existence of pelvic mass. Fifteen patients showed abnormal uterine bleeding (amenorrhea, oligomenorrhea, hypomenorrhea, vaginal bleeding, postmenopausal bleeding, and metrorrhagia). Two patients suffered from weight loss and anemia.

HSG was performed on 13 patients, of whom 2 cases were normal, and in the remainder, the fallopian tubes had been occluded. Chest X-rays in two patients showed primary pulmonary tuberculosis. Erythrocyte sedimentation rate (ESR) was performed on some of the patients, which showed readings of between 50 and 120.

One patient had a record of tuberculous peritonitis in the previous year. In two patients vaginal hysterectomy was conducted, one of whom was a 30-year-old female suffering from prolapse of the uterus. Tuberculous endometritis and tuberculous salpingitis were confirmed in both patients (Table 1). Microscopic examination of the pelvic lymph nodes in an eighty-year-old patient, who had been admitted because of pelvic mass, showed tuberculous adenitis (Table 2). Genital tract tuberculosis was associated with other genital tract diseases, including dermoid cysts (1 case), luteal cyst of ovary (1 case), and uterine leiomyomas (2 cases).

Discussion

This research indicates that out of the 27 (52%) patients who had infertility problems, 23 cases (85%) were of the primary and 4 (15%) of the secondary types. Genital tract tuberculosis usually shows no symptoms and it is diagnosed as such incidentally during infertility investigations. In general, infertility is the most common clinical

Table 1. Types of operations performed on patients with genital tract tuberculosis, admitted to Imam Khomeini Hospital during a period of 20 years.

| Type of operation | No. (%) |
|----------------------|-----------------|
| Laparotomy | 22 (43) |
| Diagnostic curettage | 19 (36) |
| Endometrial biopsy | 6 (11) |
| Cervical biopsy | 3 (6) |
| Vaginal hysterectomy | 2 (4) |
| Total | 52 (100) |

Table 2. Frequency of pathologic results of patients with genital tract tuberculosis, admitted to Imam Khomeini Hospital during a period of 20 years.

| Results of pathology | No. (%) |
|-----------------------------|---------|
| Tuberculous endometritis | 29 (56) |
| Tuberculous salpingitis | 17 (34) |
| Tuberculous peritonitis | 7 (13) |
| Tuberculosis of the ovary | 5 (9) |
| Cervical tuberculosis | 3 (6) |
| Pelvic tuberculous adenitis | 1 (2) |

symptom of pelvic tuberculosis, to the extent that it constitutes between 40 to 70 percent of the patient's chief complaints.³⁻⁴ In the studies conducted by Chattopadhyay et al in Riyadh in 1986 with 40 patients, 100% of these suffered from infertility.⁵ Infertility may be caused by the tubal occlusion, which is a stage component of the disease, but in 70% of the patients infertility was observed despite the fact that their fallopian tubes were open. In these cases, the reason for infertility was diagnosed as abnormal functioning of the fallopian tubes and endometrium.³⁻⁶

Similar to previous studies our results also shows that the age group 26 – 30 is the most commonly afflicted age for genital tuberculosis.⁷ However, Hatchins study⁸ in 1977 showed that most patients belonged to the age group of 40 – 50 years. Two patients suffered from infertility following premature labor. Three patients had records of abortion. Pregnancy of patients suffering from genital tuberculosis is usually in the form of ectopic pregnancy, abortion, premature labor, or intrauterine fetal death (IUFD).⁵⁻⁹

The second and third most common symptoms of genital tract tuberculosis were pelvic mass and AUB, respectively. This confirms the results of other studies.¹⁰⁻¹² Chest X-rays performed on two patients showed miliary changes. Genital tract tuberculosis usually follows tuberculosis of other body organs such as lungs, kidneys, and bones. Normally only after a considerable period of time from the primary infection is genital tract involvement is discovered. Occasionally, by the time genital tract tuberculosis is diagnosed, no traces of the onset of primary signs are evident. Therefore, chest X-ray must be performed on all patients. Pelvic ultrasonography and hysterosalpingography are also important diagnostic methods.

Bacteriology and pathology also play important roles in the diagnosis of genital tract tuberculosis. The best accessible tissue is endometrium.

Although no bacteriological studies were conducted on the patients under study, the pathological studies indicated that the area affected in most cases was the endometrium (59%). Tuberculous salpingitis was the second cause of pathology in these patients (34%). However, the existing reports mention fallopian tubes as the most affected area and endometrial involvement as between 60 and 70 percent.

In this research, the ovarian involvement was shown to be 9 percent. The existing reports also show that ovarian involvement is rare and in all cases has been associated with tuberculous salpingitis. In the case of the patients in this research, cervical involvement was shown to be above 6 percent. Cervical tuberculosis is usually secondary to tuberculous salpingitis and endometritis. Sometimes involvement in the primary form is through intercourse. The cervix may appear normal or inflamed and its condition may resemble invasive carcinoma. Histopathologic sections reveal granulomatous inflammation and provide the final diagnosis.³⁻¹³

As a general rule genital tract TB involvement may be through one of the following ways:

- Blood: This constitutes about 90% of the cases. The primary locus may be lungs, lymphatic glands, urinary system, bones, or joints. In many patients under study, especially those unmarried, pelvic masses associated with tuberculous salpingitis without tuberculous peritonitis were noticeable.
- By spreading to other organs. This is especially associated with tuberculous peritonitis.
- Lymphatic glands involvement and pelvic tuberculous adenitis in one patient suggested the spread of the disease through the lymph.
- Vertical spread through intercourse, especially in those patients suffering from tuberculous cervicitis.

In conclusion, tuberculosis of the genital tract is not a rare disease in Iran. It is most common in the patients within the age group of 26 to 30 years, and should be considered in differential diagnosis of the causes of infertility, pelvic mass, and AUB.

References

- 1 Opravil M. Epidemiological and clinical aspects of mycobacterial infections. *Infection*. 1997; **25**: 56 – 59.
- 2 Repond R. Tracking down tuberculosis. WHO 1974;

- 28 – 33.
- 3 Namavar-Jahromi B, Parsanezhad ME, Ghane-Shirazi R. Female genital tuberculosis and infertility. *Int J Gynaecol Obstet.* 2001; **75**: 269 – 272.
 - 4 Qureshi RN, Samad S, Hamid R, Lakha SF. Female genital tuberculosis revisited. *J Pak Med Assoc.* 2001; **51**: 16 – 18.
 - 5 Chattopadhyay SK, Sengupta BS, Edrees YB, Al-Meshari AA. The pattern of genital tuberculosis in Riyadh, Saudi Arabia. *Br J Obstet Gynaecol.* 1986; **93**: 367 – 371.
 - 6 Avan BI, Fatmi Z, Rashid S. Comparison of clinical and laparoscopic features of infertile women suffering from genital tuberculosis (TB), pelvic inflammatory disease (PID), or endometriosis. *J Pak Med Assoc.* 2001; **51**: 393 – 399.
 - 7 Muechler E, Minkowitz S. Postmenopausal endometrial tuberculosis. *Obstet Gynecol.* 1971; **38**: 768 – 70.
 - 8 Hutchins CJ. Tuberculosis of the female genital tract: a changing picture. *Br J Obstet Gynaecol.* 1977; **84**: 534 – 538.
 - 9 Tripathy SN. Infertility and pregnancy outcome in female genital tuberculosis. *Int J Gynaecol Obstet.* 2002; **76**: 159 – 163.
 - 10 Samal S, Gupta U, Agarwal P. Menstrual disorders in genital tuberculosis. *J Indian Med Assoc.* 2000; **98**: 126 – 129.
 - 11 Mikamo H, Yasuda-Kawazoe K, Sato Y, Hayasaki Y, Hua YX, Tamaya T. Juvenile fulminant adnexal tuberculosis caused by gastrointestinal tuberculosis immediately after ovarian cystectomy. *J Infect Chemother.* 2000; **6**: 98 – 100.
 - 12 Parikh FR, Nadkarni SG, Kamat SA, Naik N, Soonawala SB, Parikh RM. Genital tuberculosis—a major pelvic factor causing infertility in Indian women. *Fertil Steril.* 1997; **67**: 467 – 500.
 - 13 Lamba H, Byrne M, Goldin R, Jenkins C. Tuberculosis of the cervix: case presentation and a review of the literature. *Sex Transm Infect.* 2002; **78**: 62 – 63.

Archive of SID