

GENITAL TUBERCULOSIS- A CLINICAL STUDY

Prabhjit Kour¹, Sanjay Bhat², Kalyan Dutt³

¹Associate Professor, Department of Obstetrics and Gynaecology, ASCOMS and Hospital, Jammu.

²Associate Professor, Department of Medicine, ASCOMS and Hospital, Jammu.

³Professor, Department of Medicine, ASCOMS and Hospital, Jammu.

ABSTRACT

BACKGROUND

Fifty cases of suspected genital tuberculosis who had attended the OPD of a private nursing home in Jammu were shortlisted and investigated.

The aim of the study was to evaluate the clinical presentation of the disease, the mode of diagnosis and the response of antitubercular therapy.

MATERIALS AND METHODS

Fifty genital tuberculosis cases of all age groups were analysed at random in the OPD of Obstetrics and Gynaecology in a private nursing home of Jammu from January 2016 to December 2016. Mode of presentation was infertility, chronic pelvic pain, menstrual problems or adnexal masses not responding to treatment.

RESULTS

Maximum number of patients (36%) was in the 21-25 years age group followed by those in the 26-30 years age group (26%). Infertility was the presenting complaint in 70% patients and menstrual disturbances in 34% patients. Diagnostic laparoscopy was positive in 92.3% of patients and Hysterosalpingography (HSG) was found to be positive in 66.6%. Positive endometrial biopsy was observed in 40% patients only. 83.33% patients were relieved from chronic lower abdominal pain, while 79% of patients were relieved from menstrual disturbances. 19.14% patients conceived during or after the treatment while tubo-ovarian masses disappeared in 73.3% patients after antitubercular therapy.

CONCLUSION

Not much has changed in the investigation and management of pulmonary or extrapulmonary tuberculosis till date. Same holds true regarding genitourinary tuberculosis also despite all recent advances regarding the investigation and management. Clinical suspicion remains the cornerstone for these aspects. More extensive studies are required to determine the exact burden of genitourinary tuberculosis from this part of the world and its impact on menstrual irregularity, infertility and various other aspects of female health.

KEYWORDS

Adnexal Masses, Infertility, Genital Tuberculosis.

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BACKGROUND

Tuberculosis (TB), once thought to be a disease of underdeveloped countries and nearly completely eradicated in the western world has resurged worldwide and become a global issue. It is the second leading cause of death from infectious diseases causing approximately 4% of all deaths. In 2015, there were an estimated 10.4 million new (incident) TB cases worldwide, of which, 5.9 million (56%) were among men, 3.5 million (34%) among women and 1.0 million (10%) among children. People living with HIV accounted for 1.2 million (11%) of all new TB cases. Six

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Corresponding Author:

Dr. Prabhjit Kour,

Associate Professor, Department of Obstetrics and Gynaecology, ASCOMS and Hospital, Jammu-180017.

E-mail: drkalyandutt@gmail.com

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countries accounted for 60% of the new cases- India, Indonesia, China, Nigeria, Pakistan and South Africa.¹ Global progress depends on major advances in TB prevention and care in these countries. Worldwide, the rate of decline in TB incidence remained at only 1.5% from 2014 to 2015. This needs to accelerate to a 4-5% annual decline by 2020 to reach the first milestones of the end TB strategy. In 2015, there were an estimated 4,80,000 new cases of Multidrug-Resistant TB (MDR-TB) and an additional 1,00,000 people with Rifampicin-Resistant TB (RR-TB) who were also newly eligible for MDR-TB treatment.² India, China and Russian Federation accounted for 45% of the combined total of 5,80,000 cases. There were an estimated 1 million TB deaths in 2015 and an additional 0.4 million deaths resulting from TB disease among people living with HIV.³ Although, the number of TB deaths fell by 22% between 2000 and 2015, TB remained one of the top 10 causes of death worldwide in 2015.

The resurgence of TB in developed countries is mainly due to rising incidence of Human Immunodeficiency Virus



(HIV) infection and devastating interaction between HIV infection, diabetes mellitus and TB.¹

In the underdeveloped world, instead of HIV infection, more important promoting factors are poor case finding and poor compliance of the patients regarding dosage and duration of therapy resulting in emergence of 'multidrug resistant' TB.² In India, there is an estimated figure of 2.2 million cases of tuberculosis out of a global incidence of 10.4 million and an estimated 2,20,000 die from the disease every year. About 40% of Indian population is estimated to be infected with tubercular bacteria, the vast majority of whom have latent TB genital tuberculosis is a well-recognised entity in the aetiology of infertility in underdeveloped countries like India, Bangladesh, Nepal and Sri Lanka where tuberculosis is a prevalent disease. The frequency of genital TB in a number of studies done in Pakistan has been 2-10%. In India, overall frequency of genital TB is reported as 3% in infertile women and 41% in tubal factor infertility.³

Therefore, the present study was designed to assess the frequency of genital tuberculosis in infertile women, its clinical presentation and diagnostic approach and efficacy of therapy in this part of the country.

Fifty genital tuberculosis cases of all age groups were analysed at random in the OPD of Obstetrics and Gynaecology in a private nursing home of Jammu from January 2016 to December 2016. Mode of presentation was infertility, chronic pelvic pain, menstrual problems or adnexal masses not responding to treatment.

MATERIALS AND METHODS

Cases were selected based on the following criteria-

- Suspicion from detailed history and clinical examination. Nonspecific history like generalised weakness, loss of appetite, loss of weight, night sweats, past history of disease, positive family history, history of contact and poor socioeconomic status were all relevant factors.
- Inclusion criteria like nonspecific tests, e.g. lymphocytosis, raised ESR, positive Mantoux test and x-ray chest. Some specific tests like endometrial biopsy and HPE of lymph nodes, typical HSG, laparoscopic and hysteroscopic findings, Polymerase Chain Reaction (PCR) testing, mycobacterium testing and AFB (acid-fast bacilli) testing were also taken into consideration.
- Exclusion criteria like confirmation of some other disease, e.g. malignancy.
- Conclusion criteria for early and correct diagnosis- two nonspecific and one specific test were taken as conclusive criteria.

Antitubercular drugs used were first line, i.e. Rifampicin 450 mg daily, Isonex 300 mg daily, Ethambutol 800 mg daily and pyrazinamide 1500 mg daily for 2 months. This is followed by a consolidation phase comprising Isonex and Rifampicin for another 6-8 months.

RESULTS AND OBSERVATIONS

The present study included patients of all age groups from adolescence to postmenopausal as shown in Table 1. The youngest was 17 years old and the oldest was 49 years old.

Maximum patients were in the age group of 21-25 years, followed by those in 26-30 years. Infertility was the most common complaint in this age group. Girls in the adolescent age group presented mainly with menstrual disturbances and low backache. As shown in Table 2, infertility was present in 70% patients, menstrual abnormalities in 34% patients and chronic pelvic pain in 24% patients. Adnexal masses were seen in 16% patients. Majority of the patients had typical signs and symptoms like low-grade fever, loss of weight and loss of appetite. Two patients had pregnancy with tuberculosis.

Out of different types of menstrual disturbances, 66% patients had regular periods, 20% had oligomenorrhea, 6% patients had irregular periods, 4% patients had menorrhagia and 4% had secondary amenorrhoea as shown in Table 3.

Investigations- As illustrated in Table 4, ESR was found to be raised in 92% patients, positive Mantoux test was found in 84% patients and significant lymphocytosis was seen in 36% patients. Endometrial biopsy and Hysterosalpingography (HSG) were done in all cases of infertility. Positive histopathological examination of endometrial biopsy was seen in 40% patients. However, HSG revealed abnormal findings in 66.6% patients. Cornual block was seen in 40% cases, fimbrial block in 21.6% cases, beaded tubes in 6.4%, localised spill in 19.2%, hydrosalpinx in 8.8% and extravasation in 24.8%. HSG was normal in 33.4% patients.

Laparoscopy could be done in only 26 patients who had tubo-ovarian mass clinically or ultrasonographically. 24 patients (94.16%) had findings suggestive of tuberculosis.

Outcome of ATT- After six months of ATT, six patients (17.14%) with infertility had conceived. Chronic pelvic pain was relieved in 10 patients (83.33%). 6 patients (83.3%) with tubo-ovarian masses showed a significant decrease in size or total disappearance. 14 patients (79%) experienced relief from abnormal menstruation. Three patients developed two-fold rise in SGOT and SGPT, while two patients had hyperuricaemia. All the patients were closely monitored and the abnormal investigations reverted back to normal in due course of time without cessation of treatment.(Table 6)

Age Group (Years)	No. of Patients	Percentage
15-20	1	2
21-25	18	36
26-30	13	26
31-35	10	20
36-40	5	10
>40	3	6

Table 1. Showing Age Distribution of Patients

Signs/Symptoms	Number of Patients	Percentage
Infertility	35	70
Menstrual abnormalities	17	34
Adnexal masses	8	16
Chronic pelvic pain	12	24
Vaginal ulcer	1	2

Table 2. Showing the Clinical Spectrum

Menstrual Problems	Number of Patients	Percentage
Menorrhagia	2	4
Oligomenorrhea	10	20
Secondary amenorrhoea	2	4
Irregular periods	3	6
Normal periods	33	66

Table 3. Showing Menstrual Abnormalities

Investigations	Number of Patients	Positive Value	Percentage
Mantoux test	50	42	84
ESR	50	46	92
Lymphocytosis	50	18	36
X-ray chest	13	1	7.69
HSG	22	14	66.6
Diagnostic laparoscopy	26	24	92.3
Endometrial biopsy	30	18	60
HPE of tissue scraping	5	2	40

Table 4. Showing the Investigation Profile

Abnormalities	Number of Patients	Percentage
Cornual block	10	37.0%
Fimbrial block	5	18.5%
Beaded tubes	1	3.7%
Localised spill	4	14.8%
Hydrosalpinx	2	7.4%
Extra intravasation of dye	5	18.5%

Table 5. Showing Abnormalities in Hysterosalpingography

Complaints	Number of Patients	Relief of Complaints	Percentage
Infertility	35	6	17.14
Menstrual abnormalities	17	14	79
Adnexal masses	8	6	83.3
Chronic pelvic pain	12	10	83.33
Vaginal ulcer	1	1	100

Table 6. Showing Outcome of Treatment with ATT

HPE of tissue scrapings from non-healing scars revealed tubercular granulation tissue in all such cases and the suspicion of tuberculosis had come from the persistent sinuses in spite of usual treatment. PCR testing for tuberculosis was acceptable in only 3 cases as the test was found to be expensive.

DISCUSSION

In communities, where tuberculosis is still a major health problem, it is important to anticipate the possibility of genital tuberculosis in all patients presenting with infertility. In developed countries, tuberculosis infection of the uterus and tubes is demonstrable in less than 1% of all cases of infertility. A study done in India has revealed frequency of genital TB among infertile women as 3%, while in the same study, the frequency of genital TB in tubal factor infertility

was 41%. Some studies have depicted the frequency of infertility in women with confirmed diagnosis of genital TB.

Another study done in India has revealed the frequency of genital tuberculosis in infertility as 13%.⁴ Genital tuberculosis is nearly always secondary and the patient maybe unaware of primary focus that is mostly extragenital, and commonly, pulmonary lesion.⁵ Moreover, it may recur despite early recognition and effective treatment of primary lesion. In fact, the spread of infection takes place at a very early stage of the disease usually in adolescence or early maturity. By the time, genital tract lesion is found, the primary lesion is often healed and becomes inconspicuous. Thus, it is imperative to trace the past history of primary tuberculosis infection. It has been reported that 50% of affected women may give a past history of extragenital tuberculosis and a further number may recall, if questioned closely, contact with the disease in childhood. The involvement of the fallopian tubes, endometrium and ovaries due to genital tuberculosis is consistent with other studies.^{5,6}

As far as investigations for genital tuberculosis are concerned, histological diagnosis is confirmatory with a classical picture of granuloma, central caseation, Langhans' giant cells and lymphocytes.^{7,8} In this study, histological confirmation was achieved in all affected cases. Z.N. staining of acid-fast bacilli requires a large number of bacteria at least more than 105/mL to be present in the specimen.^{9,10} It is a presumptive test with low sensitivity. In this study, none of the patients had positive ZN staining. Bacterial culture has 100% specificity, but a major problem is that, in addition to high cost, a long duration is required for precise identification of the species. Lowenstein-Jensen (LJ) medium is used as a culture medium. However, mycobacterium tuberculosis is very difficult to grow. In our study, no positive culture was obtained.¹¹ There have been major advances in the field of biotechnology and molecular biology with introduction of several new diagnostic techniques for TB and improvements in existing ones. The new automated culture techniques have appreciably reduced the time for detection and antimicrobial testing.¹² The molecular amplification technique like PCR has made the same day diagnosis a reality. Introduction of novel new techniques like bacteriophage assays are showing a lot of promise. However, most of these techniques are too expensive and sophisticated to be of any practical benefit to the vast majority of TB patients living in developing countries for whom an early and inexpensive diagnosis remains as elusive as ever. All patients in this study belonged to low socioeconomic class. Geographical distribution also proves that tuberculosis is prevalent in those areas of the country where poverty and illiteracy dominate. Tuberculosis has always been associated with poverty, though devastating interaction between diabetes mellitus, HIV and TB infection has made it a global issue. In this study, six patients with early stage disease were asymptomatic, while seven patients with advanced disease had menstrual irregularities, pelvic pain and weight loss. This proves that usually these patients are asymptomatic and a high index of suspicion is mandatory to diagnose the condition. Tuberculosis had been described

as a disease of youth. However, in recent years, because of interaction between diabetes mellitus, HIV and TB any age group can be affected. It must be borne in mind that after treatment, if a patient conceives, there is increased chance of an ectopic pregnancy as a consequence of chronic salpingitis and tubal damage. Microsurgical reconstructive surgery of damaged and tortuous fallopian tubes in genital tuberculosis have been carried out, but resulting in very poor prognosis. It has been recommended that In Vitro Fertilisation (IVF) probably offers a better chance of pregnancy.¹³ In this study, six patients with early stage disease were cured and three of them had successful pregnancies later on. There is a risk for the newborn to contract TB if the mother has asymptomatic genital tuberculosis.¹⁴ Timely therapy at an early stage of genital tuberculosis cures the disease completely resulting in successful pregnancy. Therefore, a high index of suspicion for genital tuberculosis is essential, while investigating infertile patients in communities where tuberculosis is a prevalent disease. Microsurgical reconstructive tubal surgery in genital tuberculosis does not give encouraging results. IVF and embryo transfer is a better option in such cases.

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