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Clinicopathological Study of Female Genital Tuberculosis in a Tertiary Care Hospital

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Abstract

Background: This study aimed to describe the various clinical presentations of female genital tuberculosis and study the different methods of diagnosis and treatment.

Materials and Methods: This retrospective study was conducted in the postgraduate department of obstetrics and gynaecology, GMC Jammu from January 2018 to January 2020.

Results: Genital tuberculosis was diagnosed in 28 females over 3 years. The majority of the women (40.6%) belonged to the age group 21-29 years. Most of the women (46 %) presented with infertility followed by secondary amenorrhea (32%). 16 females who underwent diagnostic hysterolaparoscopy as a part of evaluation for infertility were diagnosed to have genital tuberculosis. Endometrial samples were sent in all cases and CBNAAT was the most valuable tool showing positive results in about 39.28% of cases. All cases were treated with anti-tubercular drugs.

Conclusion: Female genital tuberculosis is an underestimated disease mainly due to its asymptomatic nature and lack of sensitive tests. Social, familial, ethical issues continue to haunt the clinician in addition to the clinical challenges faced with a case of female genital tuberculosis.

Keywords: Genital tuberculosis, endometrial, infertility

Introduction

The global prevalence of GTB is estimated to be 8-10 million cases with a rising incidence, particularly as a result of the HIV pandemic and the emergence of multidrug-resistant strains [1-2]. Tuberculosis is one of the leading causes of mortality amongst communicable diseases worldwide [3]. Tuberculosis and HIV together, are the commonest cause of infectious disease-associated mortality worldwide. Tuberculosis is found in one-third of HIV-infected individuals. World Health Organization (WHO) in a drastic step declared TB a global emergency in 1993 and promoted a new effective TB control called Directly Observed Treatment Short-course (DOTS) strategy with 70 % case detection rate and 85 % successful treatment rates [4]. The Revised National Tuberculosis Control Programme (RNTCP) of India incorporating DOTS strategy has achieved 100 % geographical coverage with 71 % case detection rate and 87 % treatment success rate with a sevenfold decrease in death rate (from 29 to 4 %) in the year of 2010 [5]. WHO has promoted the Directly Observed Treatment Short Course (DOTS) strategy in view of high morbidity and mortality due to TB. India has attained 70% of case detection and 85% cure rates after acquiring the DOTS strategy [5].

Pulmonary TB (PTB) is the commonest type of tubercular infection and most infectious out of all types, but FGTB (female genital tuberculosis) is more dominant nowadays and is an important form of extrapulmonary TB (EPTB), which is usually the result of TB elsewhere in the body. EPTB causes long-term and short-term sequelae, and significant morbidity.

Genital tuberculosis in females affects fallopian tubes, uterine endometrium, ovaries, cervix, uterine myometrium, and vagina/vulva. Genital TB causes infertility, menstrual irregularity, and pregnancy loss in women. It is thus well recognized as an important etiological cause for infertility in areas with a high prevalence of tuberculosis. This disease not only causes tubal obstruction and dysfunction but also impairs implantation due to endometrial involvement and ovulatory failure from ovarian involvement [6].

Genital tuberculosis, caused by Mycobacterium Tuberculosis is almost always secondary to tuberculosis elsewhere in the body. The spread of the disease is from the lungs or abdomen by haematogenous route. The fallopian tubes are the commonest site to be affected resulting in endo salpingitis. Direct spread from the intestines or peritoneum can cause exosalpingitis.

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Tuberculosis spreads from the tubes to the endometrium in fifty percent of the cases. Ovaries may be involved by direct spread or via the lymphatics. Involvement of the vulva vagina and cervix can occur rarely, by infection caused by sexual contact with an infected partner [7].

This study aimed to describe the various clinical presentations of female genital tuberculosis and study the different methods of diagnosis.

Materials and Methods

This study was conducted in the postgraduate department of obstetrics and gynecology, GMC Jammu from January 2018 to January 2020.

It was a retrospective study of the clinical presentation of female genital tuberculosis over 3 years. The data was collected from the records of all the women diagnosed with cases of genital tuberculosis. The data regarding age, symptoms, clinical signs, the investigations, and the histopathological reports were analyzed. Ethical clearance was taken from the institutional ethical clearance committee. All the patients had a chest physician checkup and clearance. The data was coded and entered into a Microsoft Excel spreadsheet. Analysis was done using SPSS version 20. Results were tabulated.

Results

Twenty-eight women diagnosed to be having genital tuberculosis were included in this study. Only three patients (10.7%) had a past history of pulmonary tuberculosis.

Genital tuberculosis affects the adolescent and young women. In our study, 12.8% of females were less than 20 years, 40.6% were between 20-29 years of age. 8 women (28%) were between 30-39 years, 3 women (12.7%) were 40-49 years, and 2 women (5.9%) were more than 50 years of age (Table 1)

Table 1: Age Distribution

AGE	NO	%
<20	4	12.8
21-29	11	40.6
30-39	8	28
40-49	3	12.7
>50	2	5.9
Total	28	100

The commonest symptom was primary infertility (46%). The second commonest symptom was secondary amenorrhoea which was seen in 10 patients (32%) followed by menstrual abnormalities in about 28.5% of females (Table 2).

Table 2: Clinical presentations of patients

Symptom	No	%
Asymptomatic	3	12
Primary Infertility	14	46
Secondary Infertility	4	14
Abdominal Pain	6	18
Secondary Amenorrhoea	10	32
Menstrual Disturbances	8	28.5
Pv Discharge	1	3
Pruritis Vulvae	1	3

On clinical examination, the most common finding was an adnexal mass in 5 patients (17.8%). Ultrasound examination revealed a tubo-ovarian mass in 9 patients (32.1%). Of the 28 patients, 16 females underwent laparoscopy and endometrial

samples were also sent for histopathology, culture, TB-PCR, CBNAAT.

8 (28.5%) patients had no findings on laparoscopy, 21.2% of patients had no bilateral dye spill on chromopertubation. Other findings were hydrosalpinx (14.2%), Beaded appearance of the tube (7.14%), Adhesions (7.14%). Hysteroscopy was also done in infertile patients in the same setting (TABLE 3)

Table 3: Endoscopic Findings

Laparoscopic Findings	No	%
Normal	8	28.5
Bilateral Dye Spill Absent	6	21.4
Delayed Dye Spill	2	7.14
Hydrosalpinx	4	14.28
Granulations	1	7.14
Beaded Appearance	2	7.14
Unilateral Dye Spill	1	3.5
Adhesions	2	7.14
Pelvic Congestion	1	3.5
Hysteroscopic Findings		
Fibrosed Ostia	4	14.28
Intrauterine Adhesions	2	7.14
Small Uterine Cavity	1	3.5

Endometrial samples were sent in all patients for further evaluation. CBNAAT had positive results in almost 68.7% of patients followed by TB-PCR in 31.2% of patients. (Table 4). All patients received antitubercular drugs.

Table 4: Results of Specific Diagnostic Tests on Endometrial Samples

Tests	Done In Samples	Positive Result
Histopathological Examination(Hpe)	28	2(7.14%)
Afb Culture	28	4(14.28%)
Tb-Pcr	16	5(31.2%)
Cbnaat	16	11(68.7%)

Discussion

M. tuberculosis affects the female genital organs, especially the fallopian tubes, and thereby causes infertility. It can occur in any age group, but women in the reproductive age group (15-45 yr) are the most affected [8]. In most cases, the disease is asymptomatic or can present with a few symptoms among which infertility is the most common. Other symptoms reported are menstrual irregularities such as oligomenorrhoea, hypomenorrhoea, amenorrhoea, menorrhagia, dysmenorrhoea, metrorrhagia, pelvic pain, and abnormal vaginal discharge. In postmenopausal women, genital TB presents with symptoms resembling endometrial malignancy, such as postmenopausal bleeding, persistent leucorrhoea, and pyometra. Genital TB can mimic or coexist with other gynecological and abdominal pathologies such as genital carcinomas, acute appendicitis, ovarian cysts, PID, or ectopic pregnancy [6].

Tuberculosis is an important cause of mortality and morbidity in India. Female genital tuberculosis is usually secondary to a primary focus elsewhere in the body. It usually spreads by the hematogenous route. Genital tuberculosis can rarely occur as a primary infection when a woman has sexual intercourse with a male partner suffering from genital tuberculosis [9]. Genital tuberculosis manifests in two to twenty percent of patients with pulmonary tuberculosis. In the developed countries genital tuberculosis is the causative factor in 1% of infertile women, whereas in India genital tuberculosis is the causative factor in 18% of infertile women [10].

The fallopian tubes are involved in 90–100 % of cases with congestion, military tubercles, hydrosalpinx, pyosalpinx, and tubo-ovarian masses. The endometrium is involved in 50–80 % of cases with caseation and ulceration causing intrauterine adhesions (Asherman's syndrome) and myometrium in 2.5%. Ovaries are involved in 20–30 % of cases with tubo-ovarian masses. Cervical TB may be seen in 5–15 % cases of genital TB and may masquerade cervical cancer necessitating biopsy for confirmation of diagnosis with the granulomatous lesion. Tuberculosis of the vagina and vulva is rare (1–2 %) with a hypertrophic lesion or a nonhealing ulcer mimicking malignancy needing biopsy and histopathological examination to confirm the diagnosis. Rarely TB of the vagina can cause involvement of Bartholin's glands, vesicovaginal and rectovaginal fistula formation. Peritoneal TB can be a disseminated form of TB with tubercles all over the peritoneum, intestines and omentum and may cause ascites and abdominal mass. It may masquerade as ovarian cancer as even CA 125 levels are raised. Varying grades of pelvic and abdominal adhesions including perihepatic adhesions (FitzHugh–Curtis syndrome) are common in genital and peritoneal tuberculosis [11].

Early diagnosis is crucial for timely treatment and prevention of fibrosis and the long-term sequel, especially infertility. A detailed history, general examination to identify signs of TB at any other site, chest, abdominal and pelvic examination helps in the diagnosis. In a suspected case of tuberculosis, the purpose of various investigations is to directly isolate the organism, or indirectly look at the effects on the tissues, organs by hematological, histopathological, or microbiological methods.

Endometrial tissue is obtained at D&C/hysteroscopy-directed biopsy. The histologic examination of endometrial tissues removed by biopsy or curettage, especially from the cornual area, affords a rapid method of diagnosing genital TB. The optimal time for sampling is at the end of the menstrual cycle or within 12 hours after the onset of menstrual flow to allow the endometrial granulomata maximal time to develop. Tubercles are present in the superficial layers of the endometrium and are shed during menstruation. Demonstration of granuloma with or without Langerhans giant cells on histopathology is diagnostic of genital TB. A negative biopsy however does not rule out genital TB [12].

Female genital tuberculosis is difficult to diagnose because there are no specific clinical features. Often there is difficulty in obtaining material for bacteriological examination. All cases of infertility in endemic areas should be investigated for genital tuberculosis. Women with ascites or pelvic masses should be evaluated for tuberculosis [13]. Several investigations are done to diagnose pelvic tuberculosis like hysterosalpingography, endometrial biopsy, and cervical biopsy. Hysterosalpingography is a useful investigation in low-resource settings where laparoscopy is unavailable or unaffordable. Findings like salpingitis isthmica nodosa, rosary bead appearance, lead pipe tubes, and tobacco pouch appearance are characteristic of genital tuberculosis. Laparoscopy and laparoscopy-directed biopsy are useful in the diagnosis of tubercular salpingitis. Endometrial TB-PCR is a useful tool for the diagnosis of genital tuberculosis [10]. The use of gene Xpert has been advocated by the world health organization for the detection of *Mycobacterium tuberculosis* and rifampicin susceptibility.

The need for surgical intervention is limited as medical therapy is highly effective in the treatment of FG TB. Indications for surgical intervention are as follows: [14]

- Diagnosis is in doubt
- Drainage of large residual pelvic or tubo-ovarian abscesses,

pyosalpinx.

- Persistent symptoms of fever, pain, ascites.
- Presence of fistulae.
- Fertility evaluation after treatment.

Surgical intervention required may be laparoscopy, laparotomy, or hysteroscopy. The chances of complications such as hemorrhage, injury to the bowel, bladder, and other pelvic structures during surgery are higher due to the presence of dense adhesions, matted bowel loops. The uterus and adnexa may be buried underneath the dense adhesions making access very difficult. In such cases, biopsy must be taken from representative areas and the abdomen closed, instead of a difficult pelvic clearance which may carry the risk of fistula/sinus formation, followed by complete medical treatment. In younger women, ovarian conservation should be attempted. In cases of advanced TB, the prognosis for fertility is poor [15].

Clinicians have been grappling with Tuberculosis for decades now due to its unique features such as chronicity with low-grade symptomatology and very few specific complaints. Presenting symptoms of genital tuberculosis particularly are generally varied as discussed. Challenges continue to exist at the Policymaking level and the clinical level. Despite various national programs; identification, proper treatment, and follow-up are monumental tasks. At the clinical level, the diagnostic dilemma arises because of the varied clinical presentation of the disease confounded by diverse results on imaging, laparoscopy, histopathology, and a mixed bag of bacteriological and serological tests, each of which has its limitation in diagnostic sensitivity and specificity [16].

Conclusion

To conclude, female genital tuberculosis is an underestimated disease mainly due to its asymptomatic nature and lack of sensitive tests. To defeat TB, we require both rigor and persistent efforts. We should develop a strong political will for TB control. Researches have to be done to find out an ideal diagnostic test, develop new drugs and vaccine, and an alternate and less expensive strategy than DOTS with same or better effectiveness. Program achievements and successes have to be sustained and maintained for decades to affect the epidemiology of TB. Complacency has no role in TB Control. Imaging modalities may give some strength to the clinical suspicion but not diagnostic of the condition. Endoscopy could be the best available modality for near-perfect diagnosis which may be proved by a biopsy that can be obtained during the endoscopic procedure itself. Social, familial, ethical issues continue to haunt the clinician in addition to the clinical challenges faced with a case of female genital tuberculosis.

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References

- 1 Sharma SK, Mohan A. Tuberculosis: From an incurable scourge to a curable disease - a journey over a millennium 2013;137:455–93.
- 2 Sharma JB, Sharma E, Sharma S, Dharmendra S. Female genital tuberculosis: Revisited 2019;148:71–83.
- 3 Dye C. India's leading role in tuberculosis epidemiology and control. *Indian J Med Res* 2006;123(4):481–4

- 4 WHO Report on the TB Epidemic. TB a global emergency. WHO/TB/94.177. Geneva: World Health Organization 1994.
- 5 TB India. Revised National Tuberculosis Control Programme (RNTCP) Status Report. Central TB Division, Directorate General of Health Services. Ministry of Health and Family Welfare. Nirman Bhavan, New Delhi, India. 2016.
- 6 Grace GA, Devaleenal DB & Natarajan M. Genital tuberculosis in females. Indian J Med Res 2017;145:425–36.
- 7 Shah HU, Sannananja B, Baheti AD, Udare AS, Badhe PV. Hysterosalpingography and ultrasonography findings of female genital tuberculosis. Diagnostic and Interventional Radiology 2015;21(1):10-5.
- 8 Qureshi RN, Samad S, Hamid R, Lakha SF. Female genital tuberculosis revisited. J Pak Med Assoc 2001;51:16–8
- 9 Sutherland AM, Glen ES, Macfarlane JR. Transmission genitourinary tuberculosis. Health Bull 1982.
- 10 Desai RM *et al.* Int J Reprod Contracept Obstet Gynecol 2016;5(8):2780-2783
- 11 J.B. Sharma: Current Diagnosis in obstetrics and gynaecology 2015, 18.
- 12 Eur Respir J. 2014;44(2):435-46. Xpert MTB/RIF assay for the diagnosis of extrapulmonary tuberculosis: a systematic review and meta-analysis.: Denkinger CM *et al* 1)
- 13 Lortkipanidze GG, Vashakidze LM, Mamaladze TT, Gudzhabidze NB. The implication of laparoscopy in diagnostics of genital TB among women through cytohistological testing of bioptic specimen Georgian Med News 2015;238:39-45.
- 14 Essentials of Gynaecology 2nd Edition. Lakshmi Seshadri 14:210-216.
- 15 Gupta N, Sharma JB, Mittal S *et al.* Genital tuberculosis in Indian infertility patients. Int J Gynecol Obstet 2007;97:135– 138.
- 16 Challenges in Management of Fgtb. Bsog Focus March 2017.