Section: Obstetrics and Gynaecology

Original Research Article

A COMPREHENSIVE STUDY OF FEMALE GENITAL TUBERCULOSIS: CORRELATION OF CLINICAL ASSESSMENT & ULTRASONOGRAPHIC FINDINGS WITH ENDOMETRIAL HISTOPATHOLOGY

Harshita Srivastava[1], Rabiya Almeen[2]

[1]Assistant Professor, Dr. Sone Lal Patel Autonomous State Medical College, Pratapgarh, India.
[2]Junior Resident, Dr. Sone Lal Patel Autonomous State Medical College, Pratapgarh, India.

Received *: 25/02/2025*
Received in revised form *: 10/04/2025*
Accepted *: 27/04/2025*

Corresponding Author:
Dr. Ashok Mani Tripathi,
Associate Professor, Maharaja Suhel Dev Autonomous State Medical College, Behraich, Inida.
Email: ashokmanitripathi@gmail.com

DOI: 10.70034/ijmedph.2025.2.182

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (2); 1002-1005

ABSTRACT

Background: Female Genital Tuberculosis (FGTB), a type of extra-pulmonary TB, is particularly challenging to diagnose due to its subtle and diverse clinical presentations. Mycobacterium tuberculosis (M. tuberculosis) is an etiological agent that causes tuberculosis (TB), which is a health issue of global importance. **Objective:** To investigate the association between clinical symptoms and ultrasonographic findings with endometrial histopathology in diagnosing FGTB.

Materials and Methods: This prospective observational study was conducted from April 2023 to March 2024 at District women hospital, Dr. Sone Lal Patel Autonomous State Medical College, Pratapgarh. Out of 160 women with gynecological complaints, 140 were analyzed after excluding cases with inadequate samples and those lost to follow-up. Based on endometrial histopathological examination (HPE), participants were categorized into Group A (TB positive, n=20) and Group B (TB negative, n=120). Data on clinical presentation, gynecological examination, and ultrasonographic findings were collected and compared.

Results: Of the 140 women evaluated, 14.29% were diagnosed with FGTB through histopathology. The correlation between clinical signs, imaging results, and histopathology was limited.

Conclusion: Diagnosing FGTB remains difficult due to its non-specific symptoms and variable clinical findings. A comprehensive clinical evaluation combined with ultrasonographic assessment and confirmed by histopathology continues to be the cornerstone of diagnosis, especially in settings with limited resources. There is a pressing need for more reliable and accessible diagnostic techniques to facilitate early detection and management of FGTB, thus minimizing reproductive complications.

Keywords: Female Genital Tuberculosis, Ultrasonography, Endometrial Histopathology.

INTRODUCTION

Tuberculosis is an ancient disease & has been described in earliest literature as YAKSHAMA (Tubercle).[1] Mycobacterium tuberculosis (M. tuberculosis) is an etiological agent that causes tuberculosis (TB), which is a health issue of global importance. The most prevalent site of TB infection is the lungs; this is called pulmonary TB (PTB), where the bacilli are phagocytosed in alveolar macrophages and are contagious via aerosol dissemination. TB bacilli can also disseminate to other organs and causes extra pulmonary tuberculosis (EPTB). The genital organs are also an important site for dissemination.

The World Health Organization (WHO) reported 8.2 million TB cases in 2023 of which 16% were EPTB, equating to 1.3 million cases.[2] According to India TB report 2024, total TB cases notified is approximately 25.5 lakh which were 24.2 lakh in

2022.Appro.3.2 lakh deaths were reported in 2023.[3] The most prevalent site of bacterial infection for FGTB includes the endometrium (50%– 60%), fallopian tubes (95%–100%), ovaries (20%–30%), cervix (5%–15%), myometrium (2.5%), and vagina/vulva (1%).[4,5]

MATERIALS AND METHODS

The study was carried out in women attending outpatient & inpatient department as well as emergency admissions in labour room in District Women Hospital, Dr. Sone Lal Patel Autonomous State Medical College, Pratapgarh, over a period of one year from April 2023 to March2024.Total 160 women were enrolled for study, out of which 8 had inadequate sample and 12 lost to follow up. Group A include females with positive endometrial findings for tuberculosis and group B include females with negative endometrial findings for tuberculosis. Group A include cases positive on histopathological examination and Group B include cases negative on histopathological studies.

Study Group

Inclusion Criteria

Females with:

Infertility

Chronic discharge per vaginum (discharge>6 months) Chronic pelvic inflammatory disease (PID > 6 months) not responding to treatment Abnormal uterine bleeding (amenorrhea, infrequent menstruation, heavy menstrual bleeding, irregular bleeding) Post menopausal bleeding Exclusion criteria Pregnancy / Contraceptive related AUB Malignancy related AUB Infertility with proven ovarian & endocrinal cause with normal HSG Postmenopausal Patient on HRT COVID positive patient

A detailed history regarding age, address, education, occupation, socio- economic status was recorded.Apart from obstetric history,In infertility patient, detailed history of duration of marriage, period o infertility,Menstrual history regarding Last frequency of menses, duration of menses, volume of monthly blood loss, variation over 12 months (days), regularity of cycle and inter menstrual bleeding was taken.In patients of vaginal discharge, detail history about onset, duration amount, progress, odour, colour, consistency, precipitating factors, relation to menstrual cycle, associated complaints (abdominal pain, urinary complaints, episodes of fever, dyspareunia, itching, any local lesions) In patient of pelvic pain, detail history of site, onset, character, duration, radiation of pain and associated complaints was enquired.Detail history of weight loss, evening rise temperature, loss of apetite, anorexia, night sweat was noted.A detailed past and family history was taken regarding contact of tuberculosis, TB of any other site, history of anti tubercular treatment, thyroid disorder, diabetes mellitus, pregnancy loss, any surgical intervention or any other previous illnesses. Personal history was taken regarding diet, any kind of addiction to tobacco, alcohol, i.v drug abuse, any kind of contraception being used and for how much duration. Clinical examination including: General examination like height, weight, body mass index, pallor, icterus, edema, pulse rate, temperature, blood pressure, presence of thyroid enlargement, breast examination. Systemic examination of central nervous system, cardiovascular system, respiratory system was done. Abdominal examination was done for any mass, organomegaly and ascites. Pelvic examination- Examination of external genitalia was done to look for any lesion over skin, labia majora, labia minora.

Per speculum examination and per vaginal examination was done.

ULTRASONOGRAPHY (USG): Trans abdominal Ultra sonography (TAS) was done by using 3MHz probe. Trans vaginal ultrasonography (TVS) was done by using 5MHz probe.

Findings suggestive of TB-

1. Tubo ovarian mass
2. Hydrosalpinx
3. Thickened, heterogenous or thin endometrium.
4. Scattered small calcification
5. Intra-uterine synechiae/distorted uterine cavity
6. Adnexal fixation.
7. Fluid in pouch of douglas
8. Ascites

Assessment Criteria: Clinical assessment was done on the basis of constitutional and specific symptoms and general, systemic and pelvic examination. Ultrasonography and hysterosalpingography was e assessed. Presence of caseating granuloma, lymphocytic granuloma, giant cells helps in histopathological assessment. Correlation of clinical symptoms & Ultrasonography findings with endometrial histopathological findings was assessed.

Statistical Analysis

Statistical analysis will be done by using Student t-test and a P-value <0.05 was considered statistically significant.

RESULTS

Total 160 women were enrolled for study, out of which 8 had inadequate sample and 12 lost to follow up. Group A include females with positive endometrial findings for tuberculosis and group B include females with negative endometrial findings for tuberculosis. Group A include cases positive on histo pathological examination and Group B include cases negative on histo pathological studies.

Table 1: Distribution of cases of study group according to HPE

Group	No. Of cases	Percentage (%)
Group A	20	14.29
Group B	120	85.71
Total	140	100

Table 1 shows that out of 140 enrolled individuals in the study, 20 (50.0%) are histopathologically proven case of Genital TB (Group A) while 120 (85.71%) are histopathologically negative for Genital TB (Group B).

Table 2: Chief complaints of cases of group A n group B

Clinical Presentation	Group A (n=20) n %		Group B (n=120) n. %		P-value
Constitutive symptoms	2	10.00	18	15.00	0.805
Infertility	7	35.00	53	44.17	0.610
Abnormal uterine bleeding	6	30.00	34	28.33	0.879
Chronic PID	4	20.00	11	9.17	0.289
Post Menstrual bleeding	1	5.00	4	3.33	0.710

Table 2 shows the details of chief complaints present in group A and group B. Among Group A, most of cases present with complaint of infertility 7 (35%) while menstrual irregularity present in 6 (30%) cases, chronic pain & chronic per vaginum discharge in 2 cases (10%) each, weight loss, evening rise temperature & post menopausal bleeding in 1 (5%) case each. Among Group B, most of cases present with complaint of infertility 53 (44.17%) while menstrual irregularity present in 34 (28.3%) cases, chronic pelvic pain in 4 (3.33), chronic per vaginum discharge in 7 (5.83) cases, weight loss in 3 (2.5%), evening rise temperature in 2 (1.67%) & post menopausal bleeding in 4 (3.33%) cases. On the basis of chief complaints present, the both groups were comparable.

Table 3: Details of chief complaints with Gynaecological examination in group A (proven cases of genital TB)

Clinical presentation	n	Speculum examination		Vaginal examination	
		S/O TB	Not S/O TB	S/O TB	Not S/O TB
Constitutive symptoms	2	0	2	0	2
Infertility	7	1	6	2	5
Abnormal uterine bleeding	6	0	6	1	5
Chronic PID	4	1	3	1	3
Post menopausal bleeding	1	0	1	1	0
Total	20	2	18	5	15

Among proven cases of genital TB, out of 7 cases of infertility, only 1 case on speculum examination & 2 cases on vaginal examination showed features suggestive of genital TB. None of abnormal uterine bleeding case showed any feature of genital TB on speculum examination while only 1 case on vaginal examination had features of genital TB. Only 1 patient of chronic PID on speculum & vaginal examination had features of genital TB. Only 1 case of Post menopausal bleeding had positive findings of genital TB on vaginal examination. Patients with constitutive symptoms had not showed any feature of genital TB on speculum and vaginal examination. Out of 20 proven cases of genital TB only 2 (10%) cases on speculum examination and 5 (25%) cases on vaginal examination had positive findings for genital TB.

Table 4: Details of chief complaints with USG in group A (proven cases of TB)

Clinical Presentation	n	Ultrasonographic findings	
		S/O TB	Not S/O TB
Constitutive Symptoms	2	0	2
Infertility	7	4.	3
Abnormal Uterine bleeding	6	1	5
Chronic PID	4	1	3
Post menopausal bleeding	1	0	1
Total	20	6	14

Out of 2 genital TB cases with constitutive symptoms, no USG findings were found.

Among 7 cases of genital TB with infertility, 1 case on speculum examination while 2 cases on vaginal examination showed features suggestive of genital TB,4 had USG findings of TB. There were 6 cases of genital TB presented with abnormal uterine bleeding with 1 case showing vaginal examination suggestive of genital TB & 1 case had USG findings suggestive of genital TB.

4 cases of genital TB were presented with chronic PID, out of which 1 case had positive speculum and

vaginal examination findings suggestive of genital TB, Only1 case had USG findings suggestive of genital TB Only 1 case of genital TB had complaint of post menopausal bleeding with positive vaginal examination findings & no USG findings.

DISCUSSION

TB is a silent invader of genital tract tends to create diagnostic dilemmas because of varied clinical presentations, diverse results on imaging and laparoscopy, and limitations of histopathologic, serologic, bacteriologic, and culture methods. This is so because although the histopathologic evidence of mycobacterial infection is highly indicative of genital TB, its absence fails to exclude the infection. This study aims to establish a correlation between clinical symptoms and Ultrasonographic findings with endometrial histopathology as standard modality

In the present study, out of 140 suspected cases of TB, 20 (14.2%) cases were TB positive on endometrial histopathology. Renu et al (2001) had 13.6% histolopathogically proven cases of TB. J.B Sharma et al (2004) had 18.8 % histopathlogical positive TB cases. The reason for low HPE positive cases is because typical caseating granulomas are rare in women of reproductive age group due to periodical loss of endometrium during menses.

In present study 6 (30%) cases had findings suggestive of TB on USG among proven cases while 65 (54.17%) cases findings suggestive of TB on USG among other group. In Khurana et al (2006) 28.6% cases while in Sughra et al (2010) 16% cases had positive findings of TB on usg of pelvis.

CONCLUSION

Female genital TB poses a great challenge for the treating clinician in terms of diagnosis and treatment. The diagnostic dilemma arises due to varied and ill defining clinical presentation, non specific and less sensitive hematological and microbiological investigations, diverse results on imaging. In this study, the final diagnosis was made by good history taking, careful systemic and gynaecological examination along with judicious use of ultrasonography as diagnostic modalities, which can be helpful to diagnose FGTB at a low resource centre where newer and advanced diagnostic modalities are still not available. Available battery of histopathological and radiological test are helpful to get a collective evidence for diagnosis of TB but to a limited extent. FGTB leads to significant reproductive and genital morbidity, therefore at a point of care there is an urgent need to develop a definitive test for making conclusive diagnosis of FGTB and starting ATT to avoid its deleterious complications.

REFERENCES

1. Chaurasia, A., Ojha, V., Bonal, O. et al. Non-healing Wounds: A Delayed Wound Infection by Mycobacterium Tuberculosis. J Obstet Gynecol India 70, 225–229 (2020).
2. World Health Organization Global Tuberculosis Report 2023.
3. India TB report 2024.
4. Gatongi DK, Gitau G, Kay V, Ngwenya S, Lafong C, Hasan A. Female genital tuberculosis. Obstet Gynaecol (2005) 7:75–9. doi: 10.1576/toag.7.2.075.27000
5. Das P, Ahuja A, Gupta SD. Incidence, etiopathogenesis and pathological aspects of genitourinary tuberculosis in India: A journey revisited. Indian J Urol (2008) 24:356–61. doi: 10.4103/0970-1591.42618.