

# Genital tuberculosis an important cause of infertility needing high index of suspicion

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## Abstract

**Objective:** To report association between genital tuberculosis and infertility. **Summary of Background Data:** The incidence of genital tuberculosis varies widely with social status and environment of the patient. The incidence is around 1% amongst the gynaecological patients in developing countries. The incidence rises to 5-10% amongst patients with infertility. Tuberculosis specially affecting the female genital tract has been identified as the most difficult diagnostic challenge. Genital tuberculosis is a chronic disease with a low grade symptomology and a very few specific complaints. **Methods:** Prospective review of the patient's lab reports and histo-pathological findings. **Results:** We reviewed records of 3 patients who presented to us with complaints of infertility. On basis of various investigation modalities and pathological studies, we found out that genital tuberculosis was the cause of infertility in these patients. **Conclusion:** We report that female genital tract tuberculosis poses a diagnostic challenge. The commonest clinical manifestation is infertility. Hence, a high degree of suspicion aided by intensive investigations is important in the diagnosis of the disease. **Key Words:** Infertility, Tuberculosis, Genital tuberculosis, PCR, Hysterosalpingography.

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## INTRODUCTION

The incidence of genital tuberculosis varies widely with social status and environment of the patient. The incidence is around 1% amongst the gynaecological patients in developing countries. The incidence rises to 5-10% amongst patients with infertility. Tuberculosis specially affecting the female genital tract has been identified as the most difficult diagnostic challenge. Genital tuberculosis is a chronic disease with a low grade symptomology and a very few specific complaints. The pathogen involved in Genital Tuberculosis is Mycobacterium tuberculosis of human type. Genital tuberculosis is almost always secondary to primary infection. The fallopian tubes are invariably the primary

sites of pelvic tuberculosis. The mode of spread is by blood stream, lymphatics or sometimes there is a direct spread. It involves both the tubes simultaneously affecting the submucosal layer. The infection then spreads inwards; the mucosa gets swollen and destroyed. The fimbriae are everted and abdominal ostium remains patent. The elongated and distended distal tube with patent abdominal ostium gives appearance of **tobacco pouch**. The uterus may be involved in 60% of the cases. It causes endometrial ulceration leading to adhesion or synechiae formation (Asherman's Syndrome). This may cause infertility. Thus, high index of suspicion is essential to be able to detect this condition in its earlier stages where existing treatment would be effective in restoring the functionality of the genital tract. Especially the countries like India, where highest burden of TB exist accounting for 1/5<sup>th</sup> of global incidence per annum. We have to have clinical sensitivity to be able to undertake diagnostic investigations. Sometimes without a current pin pointing clinical evidence.

## CASE REPORT

Here we present case series of 3 patients that presented in Bharati Hospital.

### CASE 1

A 26 year old staff nurse by profession reported with inability to achieve pregnancy despite of 1 and half year of unprotected co habitation. She did not have any history of Koch's exposure in the family and community and any other complaints s/o chronic disease or genital TB. The only complaints that she had was a history of increased menstrual bleeding 3 months prior for which she was treated as pelvic inflammatory disease and the bleeding was attributed to her stressful job. Taking into account her profession as staff nurse working in an intensive care unit we decided to take her as diagnostic laprohysterocopy as her primary evaluation. On investigation- The peritoneum was embedded with **miliary tubercles** with histopathological confirmation of tuberculosis. As soon as her diagnosis was made, we started her Anti-Tuberculosis Treatment. Her response to the treatment is still awaited.



**Figure 1:** Uterus studded with tubercles and fallopian tubes had **Tobacco Pouch** appearance

### CASE 2

A 31 year old G4P0A4 reported with 1 and a half year of secondary infertility with no symptoms except for dysmenorrhoea for past 3 months. She was put on antichlamydia therapy. But she did not respond and dysmenorrhoea continued. She had undergone 2 MTP's; 1 pre marriage at 8 to 10 weeks of pregnancy and 1 post marriage and 4<sup>th</sup> weeks of pregnancy. In addition, she also had one spontaneous abortion at 16 weeks of pregnancy for which dilatation and evacuation was done.

**Investigations:** The patient was then subjected to diagnostic hysterolaprosocopy to evaluate tubal patency; uterine cavity and peritoneal adhesion in view of obstetric intervention. Her peritoneal cavity and endometrial sample were collected for TB PCR and cytology. **TB PCR showed positive on peritoneal fluid.** While the endometrium sample histologically confirmed Tuberculosis.

**Treatment:** Patient was started Anti Tuberculosis Treatment for a period of 6 months. She conceived spontaneously after 2 months of stopping the therapy.

### CASE 3

A 30 year old nulligravida reported with history of primary infertility with history of treatment taken for the same by both the husband and wife with two ovulation and induction cycle. That time she was subjected to diagnostic Laprohysterocopy 4 years prior which revealed left tubal block with minimal spill on right side. Patient was advised antibiotics and follow up after a period of 1 month. One and half year after which she was admitted with another private hospital with lower abdominal pain and per vaginal discharge .IV antibiotics was given as treatment of Pelvic Inflammatory Disease. Currently when she reported to us, **clinically** uterus was retroverted, bulky, firm, with restricted mobility, tender cervical movements and fornices.

**Investigations:** Lab investigations did not support any active indication and suspicion of tuberculosis. Onsonography minimal ascitic fluid was seen. Diagnosticlaprosocopy was undertaken and abdominal cavity was flooded with miliary tubercles and sample was sent for TB PCR. TB PCR showed negative for tuberculosis. Later patient did not follow up to us.

## DISCUSSION

Genital tuberculosis is restricted mostly to childbearing period. The patients usually have past history of lung or lymph glands. Genital tuberculosis occurs in 20 percent of patients who have pulmonary tuberculosis in adolescence. Onset is usually insidious. Symptoms vary with severity and stage of the disease. Patient may have vague symptoms like low grade fever, anorexia, anaemia to severe presentations like menorrhagia, amenorrhoea and infertility. Infertility may be primary or secondary and is present in 70-80 percent cases of pelvic tuberculosis. The physician should be conscious of the entity. One should suspect and exclude genital tuberculosis when there is unexplained infertility or amenorrhoea; recurrent episodes of pelvic infections not responding to usual course of antibiotics and when mass with nodules in the pouch of Douglas.

## CONCLUSION

Thus we conclude that female genital tract tuberculosis poses a diagnostic challenge. Hence an active intervention is required as early as possible Presenting symptoms are generally varied; infertility being the most frequent clinical manifestation (43-74%). Other clinical manifestations include oligomenorrhoea (54%), amenorrhoea (14%),

menorrhagia (19%), abdominal pain (42.5%), dyspareunia (5-12%), and dysmenorrhoea (12-30%). Good history taking, along with correct sampling using various imaging modalities and use of PCR will certainly turn around the diagnostic difficulty of genital TB. Tuberculosis is a chronic infectious disease and the morbidity associated with this condition has major health implications. A high degree of suspicion aided by intensive investigations is important in the diagnosis of the disease.

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