

## ISOLATION OF MYCOBACTERIA FROM CASES OF INFERTILITY IN WOMEN

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### SUMMARY

**Mycobacterium tuberculosis** is an important causative organism leading to primary and secondary infertility. In this study, the endometrial biopsy samples of the 200 patients attending infertility clinic of Gynaecology department of G.T.B. Hospital, Shahdara, Delhi, were studied for histopathology and mycobacterial examination and culture. Similarly the sputum examination for acid fast bacilli was carried out.

The incidence of genital tuberculosis was found to be 6%. The sputum examination for AFB was helpful to detect active pulmonary tuberculosis in those infertility patients, who gave history suggestive of tuberculosis and showed parenchymatous lesions on X ray chest. The histopathology and culture of AFB of the endometrial biopsy samples improved the diagnostic accuracy.

### Introduction

*Mycobacterium tuberculosis* is an important causative organism leading to primary and secondary infertility in women (Schaefer, 1976). Endometrial biopsy is the routine diagnostic procedure to identify the cause of infertility (Sharma and Mittal, 1979, Singh et al 1977). Conventionally histopathological examination is the method of diagnosis of genital tuberculosis but this system nevertheless has its own limitations. Mycobacterial examination and culture when used along with histopathology, increase the number of positive cases. Genital tuberculosis is

usually secondary to tuberculosis elsewhere in the body; the most common site being primary focus in the lungs. Therefore sputum smear examination and culture of AFB were carried out to diagnose active pulmonary tuberculosis. Since a simultaneous study of endometrial biopsy and sputum examination is not available in the literature reviewed, a correlation was sought between the two.

### Material and methods

The female patients attending the infertility clinic of the Gynaecology department of G.T.B. Hospital, Shahdara, Delhi were the subject of this study. The total number of patients examined were 200.

At the outset, the patients were examined clinically for evidence of tuberculosis. Alongwith this, routine haemogram and X ray chest were done.

I. The endometrial biopsy was performed in all the patients and the specimens were sent for :-

- i) Histopathological examination
- ii) Microscopy and culture for Acid fast bacilli (AFB)

II. The sputa of all the patients were examined for acid fast bacilli by Ziehl Neelsen's staining and, after concentration, were inoculated on Lowenstein Jensen's media. (Allen and Baker, 1968).

The endometrial biopsy and sputum cultures were examined every week for growth of acid fast bacilli (AFB) upto 8 weeks. The positive cultures were identified by rate of growth, type of growth, pigment production and biochemical tests (Finegold and Martin 1982).

### Results

Out of 200 patients examined who were in the age group of 18 years to 39 years, three patients gave history suggestive of tuberculosis and, on X ray examination, revealed evidence of parenchymatous lesions.

Infertility was the major complaint of all the 200 patients which clinically manifested differently. Table I shows the clinical presentations of all these cases like pain in lower abdomen, oligo/amenorrhoea and dysfunctional uterine bleeding. The cases of secondary infertility gave obstetric history like abortions, premature delivery etc. The correlation of histopathology and culture of AFB from endometrial biopsy is shown in table II. Here eight cases were diagnosed as tuber-

**TABLE I**  
**CLINICAL PRESENTATION**  
**OF INFERTILITY**

Clinical presentation	Primary	Secondary
	Infertility	Infertility
	No.	No.
Oligomenorrhoea/ amenorrhoea	35	6
Dysfunctional uterine bleeding	24	15
Pain in lower abdomen	83	37
	142	58

cular endometritis by histopathology as well as culture of AFB. Four cases which were diagnosed as chronic endometritis by histopathology were AFB culture +ve. 74 and 95 biopsies were diagnosed as secretory and proliferative endometria respectively, and were AFB culture -ve. The miscellaneous group which included endometrial hyperplasia, endometrial carcinoma and products of conception, were 3 in number and had AFB culture -ve.

The results of the sputum and endometrial biopsy examination are given in Table III.

**TABLE II**  
**ENDOMETRIAL BIOPSY-CORRELATION OF**  
**HISTOPATHOLOGY AND CULTURE OF AFB**

Histopathological findings	No.	Culture of AFB	
		Positive	Negative
Tubercular endometritis	8	8	0
Secretory endometrium	74	0	74
Proliferative endometrium	95	0	95
Chronic endometritis	20	4	16
Miscellaneous	3	0	3
<b>Total</b>	<b>200</b>	<b>12</b>	<b>188</b>

TABLE III  
RESULTS OF SPUTUM AND  
ENDOMETRIAL BIOPSY EXAMINATION

Specimen	Direct Microscopy		Culture	
	Positive	Negative	Positive	Negative
Sputum	2	198	2	198
Endometrial biopsy	1	199	12	188

As mentioned earlier in the results, the two sputum samples of the three patients, who gave history suggestive of tuberculosis and showed parenchymatous lesions on X ray, were positive by direct microscopy and culture and the EB sample of one of these two sputum +ve patients, was AFB culture positive., Only one EB sample out of 200 was positive by direct microscopy for AFB, while twelve were positive for culture of AFB. All the twelve culture isolates were identified as *M. tuberculosis*.

#### Discussion

Infertility is a social problem in India. Investigations oriented approach leads to accurate diagnosis. Endometrial biopsy is a routine and simple diagnostic investigation in cases of infertility. The hysterosalpingography and laparoscopy are good methods for the diagnosis of infertility but they are still used as supplement and not as a replacement of the endometrial biopsy procedure (Patwardhan and Ingle, 1988). Many workers have reported the incidence of genital tuberculosis ranging between 2.5-5.% (Westrom, 1975; Behrman, 1989, Sheth & Krishna, 1979, Shirgaonkar et al 1988). In our study we have found the incidence as 6%. We have also observed that histopathology along with culture of AFB improves the diagnostic accuracy. Kothadia et al, (1989) made

similar observations. They have found the incidence of genital tuberculosis as 16/225 cases i.e. approximately 7%. We have also observed that the sputum examination for AFB should be carried out in those cases of infertility that give history suggestive of tuberculosis and positive radiological findings. The sputum examination would enable us to detect cases of active pulmonary tuberculosis. Thus sputum examination for AFB, though not advisable as a routine investigation in cases of infertility, should be done if there is clinical or radiological evidence of tuberculosis.

The utility of culture of AFB from endometrial biopsy sample along with histopathology is undebatable. Similarly the species identification would help to study drug sensitivity and would lead to proper diagnostic and therapeutic approach.

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