

ORIGINAL RESEARCH

Endoscopic Findings of Female Genital Tract Tuberculosis: A 3-year Analysis at a Referral Center

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ABSTRACT

Objective: To study the laparoscopic and hysteroscopic appearances of female genital tract tuberculosis (FGTB).

Study design: This is a hospital-based prospective observational study.

Materials and methods: The study was conducted in the Department of Obstetrics and Gynecology, Vardhman Laparoscopy Centre, from July 1, 2014 to June 31, 2017. A total of 2,200 patients presenting with infertility were subjected to endoscopic evaluation, and the findings suggestive of TB were recorded.

Results: Out of total 2,200 patients who underwent endoscopic evaluation for infertility, 33 and 21.5% had findings suggestive of TB on laparoscopy and hysteroscopy respectively, and 59.5 and 55.6% of these patients had laparoscopic and hysteroscopic findings of early-stage disease respectively.

Conclusion: Endoscopic evaluation of unexplained infertility is an indispensable tool for early diagnosis of FGTB and providing antitubercular treatment, while it is in the reversible stage.

Keywords: Female, Genital, Hysteroscopy, Laparoscopy, Tuberculosis.

How to cite this article: Jain N, Jain V, Srivastav S, Agarwal K. Endoscopic Findings of Female Genital Tract Tuberculosis: A 3-year Analysis at a Referral Center. *Int J Gynecol Endsc* 2018;2(1):1-3.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Genital TB affects 12% of patients with pulmonary TB and represents 15 to 20% of extrapulmonary TB. A recent study by Indian Journal of Medical Research stated that the number of women with genital TB in infertility has increased to 30% in 2015 from 19% in 2011.¹ It becomes symptomatic only in the end stage when the disease has caused irreparable organ damage with loss of anatomy and functional capability. Investigations like Tuberculin

Skin test has sensitivity of 55% and specificity of 80% in patients with genital TB,² abdominal and pelvic ultrasound, computed tomography, and magnetic resonance imaging are able to diagnose in circumstances where abdominal or pelvic mass, loculated fluid, septate ascites, thickened peritoneum, or adnexal masses are present. In such end stage, the prognosis for fertility is guarded. Hysterosalpingogram is performed frequently as an investigation for infertility. Tubal occlusion, beaded appearance, lead pipe appearance, tubal dilatation, hydrosalpinx are common findings in tubal genital TB. Polymerase chain reaction can help in early diagnosis but false negative result is an important limitation. Diagnostic laparoscopy, hysteroscopy with directed tissue, biopsy are very important and carry sensitivities up to 96%. Although definitive diagnosis of genital TB requires definitive histopathological confirmation, but this can be proven in only few number of cases. Hence, Revised National Tuberculosis Control Programme (RNTCP) guidelines 2016 allow use of other lesser sensitive tests or high clinical suspicion for provisional diagnosis and starting antitubercular treatment.³

MATERIALS AND METHODS

The study was undertaken at a tertiary care referral center for advanced gynecological laparoscopic surgery from July 1, 2014 to June 31, 2017. A total of 2,200 infertility patients underwent diagnostic laparoscopy and hysteroscopy as part of infertility evaluation. The inclusion criteria were patients complaining of infertility (primary or secondary), abnormal uterine bleeding or amenorrhea, lower abdominal pain, and adnexal mass on sonography. Past history of antitubercular treatment was noted in detail, including the duration of treatment, organs/systems involved, and the diagnostic criteria by which TB was confirmed. Previous operative interventions and operative findings were recorded in detail.

RESULTS

Tuberculosis affects a large number of people worldwide and the incidence is increasing. Genital TB is one form of extrapulmonary disease. In our study, out of total 2,200 patients who underwent diagnostic endoscopy for infertility, 33% (n = 726) had findings suggestive of TB on laparoscopy and 21.5% (n = 474) on hysteroscopy. The

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age of patients ranged from 20 to 40 years. The duration of infertility ranged from 1 to 25 years; 52% (n = 378) and 48% (n = 350) of women presented with primary and secondary infertility respectively; 8.2% (n = 60) patients had history of previous ectopic pregnancy; 16.5% (n = 120) patients had previous history of pulmonary TB; 59.5% (n = 432) patients were picked up in mild form; 15.7% (n = 114) patients in moderate; and 16.4% (n = 119) in severe form. In addition, 36.3% patients had milder form of TB on

hysteroscopy and 27.3% had moderate-to-severe form of disease. Laparoscopic and hysteroscopic findings of these patients have been tabulated in Tables 1 and 2 respectively.

DISCUSSION

Female genital TB is an important cause of significant morbidity, short- and long-term sequelae, especially infertility. Timely diagnosis and early treatment may prevent infertility and other sequelae of the disease.

Table 1: Laparoscopic findings

Observations	No. of patients	%
Tubes are sacculated, convoluted, fluid-filled vesicles, yellow discoloration of mesosalpinx (Fig. 1)	432	59.5
Hydrosalpinx (Fig. 2)	30	4.1
Lead pipe appearance	12	1.6
Encysted fluid collection	30	4.1
Tubo-ovarian mass	72	9.9
Pyosalpinx	6	0.8
Various grades of pelvic adhesions	220	30.3
Miliary tubercles (Fig. 3)	12	1.6

Table 2: Hysteroscopic findings

Observations	No. of patients	%
Microcaseations and micropolyps (Fig. 4)	264	55.7
Fibrosed ostia	96	20.2
Synechia bands (Figs 5 and 6)	24	5
Narrow cavity/T-shaped cavity	78	16.4
Hysteroscopy not done	12	2.5
Asherman's syndrome	6	1.2

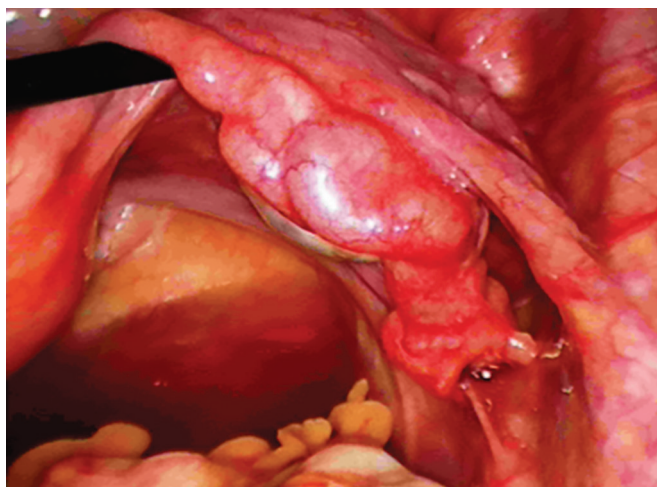


Fig. 1: Grossly convoluted and sacculated tube

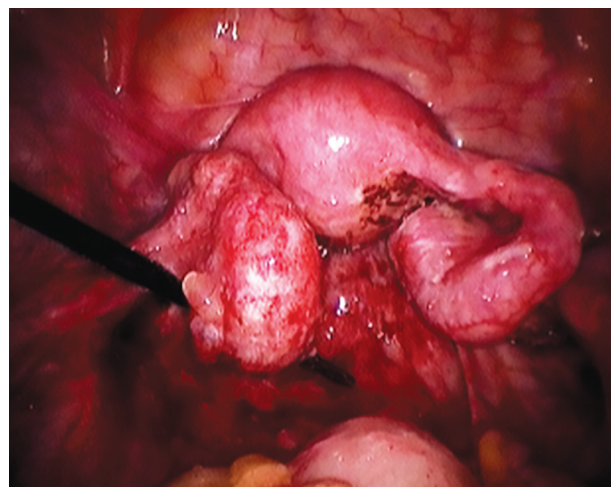


Fig. 2: Bilateral tubes tense dilated hydrosalpinx

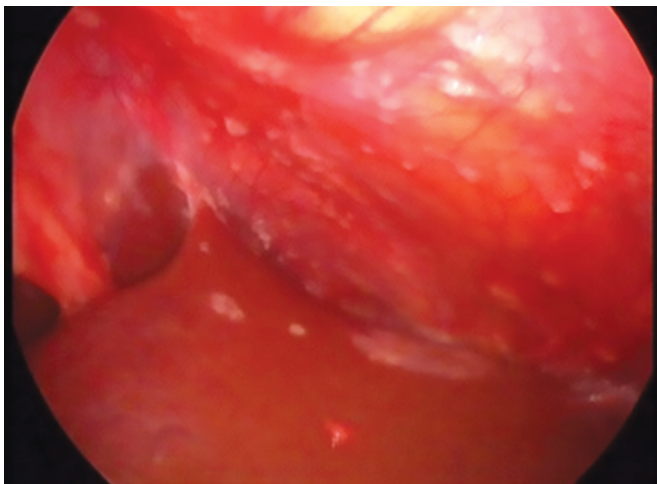


Fig. 3: Miliary tubercles on the liver

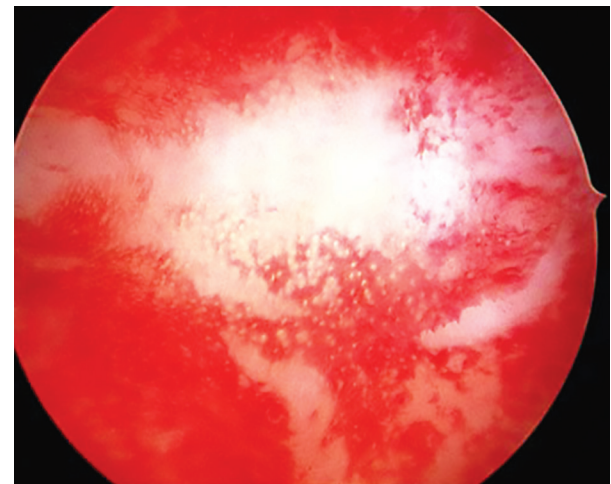


Fig. 4: Microcaseations and micropolyps

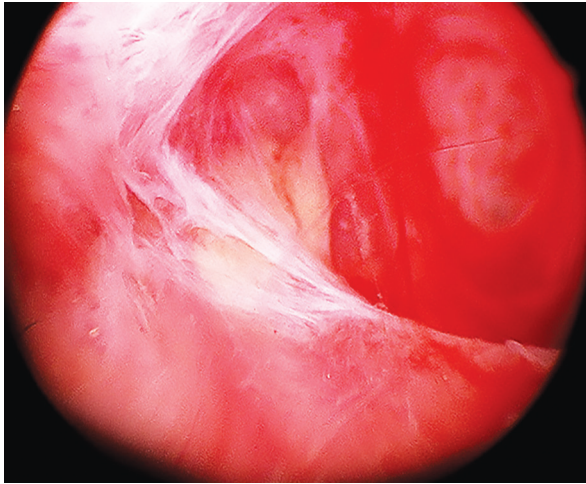


Fig. 5: Adhesion in uterine cavity

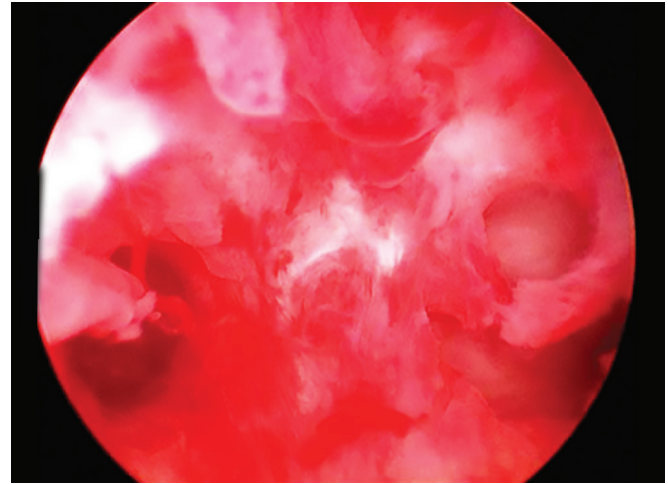


Fig. 6: Adhesion with central musculo-fibrous synechia band

In our study, we found that 33% (726/2200) of female factor infertility was due to genital TB, similar to 31% found in a study conducted in Yemen from 2012 to 2014.⁴ The incidence of genital TB in patients presenting with infertility was 16.4% in an Indian study of year 2005.⁵ Hence, the incidence of FG TB is increasing, so gynecologists will be increasingly faced with cases of TB and its consequences. In our study, 80 to 90% of cases of FG TB affects young women between 25 and 35 years of age. The median age of these patients was 31 years (22–40 years) in a study conducted in Jaipur in 2005, whereas mean age was 26.33 years in a study conducted in Surat in 2016.^{5,6} Hence, it is common in the reproductive age group and consequently affects the fertility potential of these women, thereby necessitating the early diagnosis and intervention of these cases to prevent the adverse reproductive sequelae of this chronic infection.

Genital TB generally occurs secondary to pulmonary (commonest) or extrapulmonary TB like gastrointestinal tract, kidneys, skeletal system, meninges, and miliary TB through hematogenous and lymphatic route. In our study, patients with previous history of pulmonary TB was 16.4% and extrapulmonary TB was 11.4%, similar to 22.35 and 11.7% respectively, of a study conducted at All India Institute of Medical Sciences (AIIMS), New Delhi.⁷ The cases of primary infertility were 52% and secondary infertility were 47.9% in our study. The cases of primary and secondary infertility were 81.5 and 18.5% respectively, in a study in Surat in 2009.⁶ In our study, previous history of ectopic pregnancy was present in 8.2% (60/726) of patients. Genital TB was responsible for 13.2% of all cases of ectopic pregnancy.⁸

Laparoscopic appearance of encysted ascites and various grades of pelvic adhesions were seen in 7.1 and 65.8% of women respectively at AIIMS, Delhi. The various findings of fallopian tubes in this study were normal looking tubes in 7.1%, inability to visualize in 14.1%, presence of tubercles on tubes in 3.52%, caseous granuloma in

3.52%, hydrosalpinx in 17.6% (right tube: 11.7%, left tube: 5.9%), pyosalpinx in 3.5% on right tube, and 2.35% in left tube, beaded tube in 3.5% on right tube, 4.7% in left tube with tobacco pouch appearance in 2.35% of women. Frozen pelvis was seen in 17.2% on laparoscopy.⁷ 24.4% patients had synechia of varying degrees on hysteroscopy.⁶

CONCLUSION

Female genital tract TB is still a common health problem contributing to infertility. Antitubercular therapy is not effective in restoration of women's fertility function as they often present with advanced pathology beyond recovery. Herein lies the need for early endoscopic diagnosis in order to clinch the diagnosis in reversible stage and preserve reproductive potential.

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