

## Sharma's Kissing Fallopian Tubes Sign: A New Tubal Sign in Female Genital Tuberculosis

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### About the Author



**Jai B. Sharma** is a Professor in Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, New Delhi. Before that he has worked as Professor in Maulana Azad Medical College, New Delhi. He has over 360 publications and has 120 peer reviewed articles in various journals of national and international repute. He is currently Editor in chief of Indian Obstetrics and Gynecology, Journal of Paediatrics, Obstetrics and Gynecology (JPOG) and Associate Editor of International Journal of Gynecology and Obstetrics, India. He has edited three books and has been awarded many times by Royal College of Obstetricians and Gynaecologists (RCOG), London. His special areas of interest include female genital tuberculosis, urogynecology and anemia in pregnancy.

### Introduction

According to Global TB Report 2015, 3.2 million TB cases occur in women in a year with 4,80,000 deaths [1]. Female genital tuberculosis (FGTB) is a common cause of infertility, menstrual dysfunction, tubo-ovarian masses and other complications in developing countries [2].

Fallopian tubes are involved in almost all patients with genital tuberculosis causing congestion, flimsy adhesions, plastic adhesions, hydrosalpinx, pyosalpinx and tubo-

ovarian masses [2]. Traditionally definitive diagnosis is made by demonstration of acid fast bacilli (AFB) on microscopy or culture on endometrial or peritoneal biopsy or on demonstration of epithelioid granuloma on histopathology [2]. Though they are definitive in diagnosis, they may miss the diagnosis in many cases. Polymerase chain reaction (PCR) has high sensitivity but has high false positivity and alone cannot be used for diagnosis of FGTB [2]. Imaging methods like hysterosalpingography, ultrasound scan, CT scan and MRI may be useful in tubercular tubo-ovarian masses [2]. Positron emission tomography may be useful in tubercular tubo-ovarian masses with increased FDG uptake [2]. Laparoscopy is the most reliable modality to diagnose abdominal and genital tuberculosis by providing opportunity to assess the severity and extension of disease and also to obtain biopsy from suitable areas and to assess the condition and patency of fallopian tubes [3]. A new sign of FGTB on laparoscopy is presented here.

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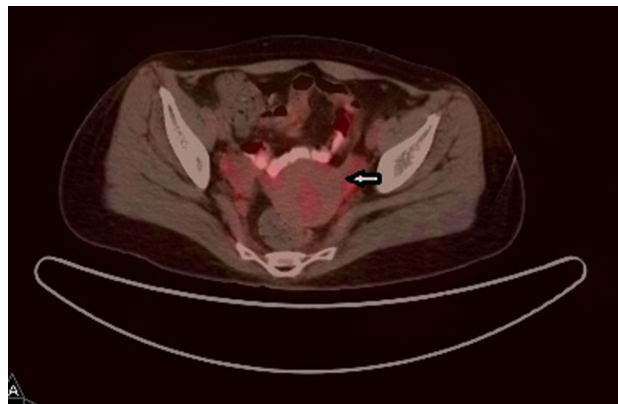
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## Case Study

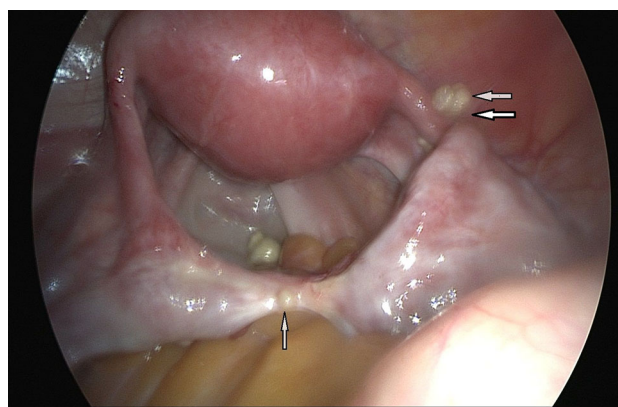
A 28-year-old nulliparous female presented with primary infertility along with oligomenorrhea and pain abdomen. She had a past history of pulmonary tuberculosis in childhood. On vaginal examination, uterus was anteverted, and there was fullness and tenderness with vague masses in left and posterior fornix. PET-CT scan showed bilateral hydrosalpinx with adnexal masses with increased FDG uptake suggestive of infective pathology likely to be tubercular (Fig. 1). Endometrial biopsy showed negative AFB culture and histopathology but positive in-house DNA PCR in which a 240-bp region of the *mpt 64* gene was amplified by PCR. On diagnostic laparoscopy, there were definitive findings of FGTB in the form of caseous nodules, shaggy areas, pelvic adhesions. Both tubes were dilated, had tubercles and were blocked and fused to each other at fimbrial end in the pouch of Douglas posterior to uterus (Kissing sign) with caseous material on them (Fig. 2). Biopsy from caseous nodules showed epithelioid granuloma on histopathology confirming FGTB. She was started category 2 antitubercular therapy (ATT) with streptomycin (S), rifampicin (R), isoniazid (H), pyrazinamide (Z) and ethambutol (E) for 8 months under Revised National Tuberculosis Control Program of India (RNTCP). Her postoperative period and follow-up were uneventful.

## Discussion

FGTB continues to be a common cause of infertility [1, 2]. It mainly involves fallopian tubes (95–100%) and endometrium (50–80%) [2]. It causes tubal blockage, hydrosalpinx, pyosalpinx, tubo-ovarian masses and pelvic adhesions [2]. Definitive diagnosis of FGTB is made by demonstration of AFB on microscopy or culture on endometrial biopsy or the presence of epithelioid granuloma on histopathology, but these tests are positive in very few cases and can miss the diagnosis. Radiological imaging modalities like ultrasound, CT scan, MRI scan and PET scan are more useful in tubercular tubo-ovarian masses [2]. PCR has high sensitivity but high false positive rate [2]. Gene Xpert has been added to the armamentarium in diagnosis of both pulmonary and extra pulmonary tuberculosis with promising results [2]. Diagnostic laparoscopy is the best modality to diagnose female genital tuberculosis by providing opportunity to assess the genital tract, intestines, omentum, liver and peritoneal cavity for various tuberculous lesions [2]. It also provides an opportunity to take directed biopsies from representative areas under direct visualization [3]. It may show various tubal pathologies like hydrosalpinx, pyosalpinx, alternate constriction and dilatation of fallopian tubes (Sharma's python sign) [4]. Diagnostic laparoscopy has been used for diagnosis of FGTB and may show definitive findings of FGTB (caseous



**Fig. 1** PET-CT scan showing tuberculous tubo-ovarian masses with increased FDG uptake in the adnexal areas



**Fig. 2** Laparoscopy showing Kissing fallopian tube sign in a proven case of female genital tuberculosis (*arrow*). Caseous nodules are also shown (*double arrow*)

nodules/tubercles) or positive findings of FGTB (shaggy areas, pelvic adhesions, straw-colored fluid) [2, 3]. In the present case, there were definitive findings of FGTB with caseous nodules with confirmation of diagnosis on histopathology of biopsy from the nodule. The new sign (Sharma's Kissing fallopian tubes sign) probably occurred due to secretion of caseous material from the tubes leading to their fusion and distension and blockage and adhesions to each other and to posterior surface of uterus due to sticking caseous fluid. It is felt that new sign observed during laparoscopy can be used as a diagnostic test of FGTB. However, more studies are needed before it is routinely recommended in clinical practice.

## Conclusion

Female genital tuberculosis can cause fusion of fallopian tubes at their fimbrial ends manifesting as Sharma's Kissing fallopian tube sign on laparoscopy and can be used as a diagnostic test of FGTB.

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#### **Compliance with Ethical Standards**

**Conflict of interest** The author does not have any conflict of interest.

**Ethical Approval** All the authors declare that they have no conflict of interest. All procedures performed in the study were in accordance with the ethical standard of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments.

**Informed Consent** The case report is part of our study on female genital tuberculosis approved by ethical committee of our institute. The patient gave informed consent before inclusion in the case study.

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