



Female Genital Tuberculosis Presenting as Primary Infertility and Unilateral Hydro-salpinx: A Diagnostic Pitfall Prior to Assisted Reproduction

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Abstract

Female Genital Tuberculosis (FGTB) is a recognised but frequently overlooked cause of infertility in women of reproductive age, particularly in tuberculosis-endemic regions. Delayed diagnosis may lead to irreversible reproductive tract damage and inappropriate fertility interventions.

We report the case of a 21-year-old woman presenting with long-standing primary infertility who had undergone repeated ovulation induction without definitive etiological evaluation. Imaging demonstrated unilateral hydro salpinx, and diagnostic hysteroscopy and laparoscopy revealed extensive pelvic adhesions and uterine cavity distortion. Histopathological examination of the excised fallopian tube confirmed tuberculosis. Following completion of standard antitubercular therapy and subsequent In Vitro Fertilisation (IVF), the patient achieved a successful live birth.

This case highlights the importance of considering genital tuberculosis during infertility workup and emphasises the need to exclude active disease prior to assisted reproductive techniques to optimise outcomes and prevent serious maternal–fetal complications.

Background

Female genital tuberculosis accounts for a significant proportion of extra pulmonary tuberculosis and remains an important cause of infertility worldwide [1]. Despite this, it is frequently underdiagnosed due to its indolent course, nonspecific symptoms, and overlap with common gynaecological conditions such as pelvic inflammatory disease. In infertility practice, failure to recognise genital tuberculosis early may result in repeated ineffective treatments, delayed diagnosis, and unsafe use of assisted reproductive technologies [2,3]. This case illustrates a common diagnostic pitfall and reinforces the clinical importance of systematic evaluation before fertility treatment [4].

Case presentation

A 21-year-old woman presented with primary infertility of five years' duration. She had previously received three cycles of ovulation induction with clomiphene citrate at another centre without success. There was no history of pulmonary tuberculosis, pelvic inflammatory disease, or previous pelvic surgery. Her medical history was notable only for bronchial asthma. Menstrual cycles were regular, and physical examination was unremarkable.



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Investigations

Transvaginal ultrasonography demonstrated a hypoplastic, subseptate uterus. Hysterosalpingography revealed left-sided hydro salpinx with tubal obstruction. Diagnostic hysteroscopy showed intrauterine synechiae and a T-shaped uterine cavity. Laparoscopy revealed dense pelvic adhesions and a markedly dilated left fallopian tube. A left salpingectomy was performed due to severe tubal damage. Histopathological examination of the excised tube showed granulomas composed of epithelioid histiocytes and lymphocytes with central caseating necrosis and Langhans-type giant cells, consistent with tuberculous salpingitis. No malignancy was identified. A tuberculin skin test was positive, supporting the diagnosis.

Differential diagnosis

- Chronic pelvic inflammatory disease
- Endometriosis
- Tubal factor infertility of non-infectious origin
- Genital malignancy (excluded histologically)

Treatment

The patient received standard first-line antitubercular therapy consisting of isoniazid, rifampicin, and pyrazinamide during the intensive phase, followed by isoniazid and rifampicin for a total treatment duration of six months.

Outcome and follow-up

Following completion of antitubercular therapy, the patient was referred for assisted reproduction. She underwent IVF, and the first embryo transfer resulted in a successful pregnancy. A healthy infant weighing 2 kg was delivered in July 2022. The neonate required short-term neonatal intensive care but was discharged in good condition. Both mother and child remained well on follow-up.

Discussion

Although FGTB is well documented in the literature, delayed diagnosis remains common, particularly in infertility settings where empirical ovulation induction may precede thorough etiological evaluation [1,3]. In this case, repeated ovulation induction without tubal assessment delayed diagnosis and definitive management. This report highlights three clinically important issues. First, unilateral hydrosalpinx in young women from TB-endemic regions should prompt consideration of genital tuberculosis. Second, histopathological examination remains crucial for diagnosis, as microbiological tests may have limited sensi-

tivity in genital disease. Third, assisted reproductive techniques should be deferred until completion of antitubercular therapy due to the risk of disease reactivation and adverse pregnancy outcomes, including congenital tuberculosis. While fertility outcomes following FGTB are often poor due to residual structural damage, this case demonstrates that successful pregnancy is achievable when diagnosis and treatment occur before irreversible endometrial destruction.

Learning points

- Female genital tuberculosis should be considered in young women presenting with unexplained infertility or hydrosalpinx, especially in TB-endemic regions.
- Empirical ovulation induction without definitive evaluation may delay diagnosis and worsen reproductive outcomes.
- Histopathological confirmation plays a pivotal role in diagnosing genital tuberculosis.
- Assisted reproductive techniques should only be undertaken after completion of antitubercular therapy.
- Early recognition and treatment can result in successful fertility outcomes despite tubal disease.

Patient perspective: “After years of unsuccessful treatment, receiving a diagnosis explained the cause of my infertility. Completing treatment and then achieving pregnancy gave me hope and confidence in my care.”

Consent: Written informed consent was obtained from the patient for publication of this case report.

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