

Case Report

Genital tuberculosis with secondary infertility - a case report of successful treatment and subsequent livebirth in Uyo, Nigeria

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Accepted 27 May, 2011

Female genital tuberculosis is an uncommon cause of infertility in our environment and is hardly looked for as part of routine assessment of infertility. With a resurging incidence of Tuberculosis in the face of the HIV pandemic, it is important to always have genital tuberculosis in mind especially when no other cause is found for the infertility. We report a case of a patient with 15 years infertility that was discovered to have genital tuberculosis following a laparotomy for a pelvic mass and a histologic diagnosis of TB. She was given anti-TB therapy and subsequently had spontaneous pregnancy with a livebirth.

Keywords: Genital Tuberculosis, Tuberculosis, infertility, tuberculous salpingitis, Nigeria.

INTRODUCTION

Tuberculosis remains a major public health problem worldwide and is of most concern in developing countries (WHO, 2007). However, the overall incidence worldwide in 2007 was said to have shown a significant decline (WHO, 2007). It is difficult to say so conclusively about Sub-Saharan Africa, Asia and South America where a resurgence believed to be fueled by the HIV pandemic, with which it mirrors in incidence, morbidity and mortality has been noticed (Harries et al., 2004; API TB Consensus Guidelines, 2006).

The incidence of female infertility is rising globally, with variation in preponderance of aetiology between the developed nations where anovulation is common; and the not so developed nations where tuboperitoneal damage from infectious disease holds sway (Ombelet et al., 2008). Genital tuberculosis (endometrial and salpingoophoritic) is a known cause of infertility in women (Jahromi et al., 2001; Ojo et al., 2008). Genital TB is a form of extrapulmonary TB and is always secondary to TB infection elsewhere (usually pulmonary) in the body (Gatong et al., 2005). The tubes are usually the starting

point of pelvic TB with a direct extension to the endometrium in about half of the cases (Arora et al., 2003; Gatong et al., 2005; Ojo et al., 2008). Female genital tuberculosis is an uncommon cause of infertility in our environment and is hardly looked for as part of routine assessment of infertility

Data regarding the actual prevalence rates of genital TB in the general population is scanty due mainly to its subtle presentation (Singh et al., 2008). In the infertility clinics worldwide, an estimated 5% of the women presenting have genital TB with prevalence rates ranging from less than 1% in the developed countries to a reportedly rising trend in the developing countries (Malik 2003; Singh et al 2008).

Genital tuberculosis often exists without any symptoms or clinical signs. The most common initial symptom of pelvic tuberculosis is infertility yet in infertility management this is rarely looked for. Other manifestations include menstrual irregularities and chronic pelvic or lower abdominal pain. It is almost always acquired by hematogenous spread from an extragenital source such as pulmonary or abdominal tuberculosis. The fallopian tubes are the first and most commonly affected genital organs, followed by endometrium, ovary, and cervix (Tripathy and Tripathy 2002; Gatong et al., 2005).

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Adhesions between tubes, ovaries, omentum, intestines, liver, and diaphragm (the Fitz Hugh Curtis syndrome) are other common findings in tuberculosis (Tripathy and Tripathy 2002; Malik, 2003; Gupta et al., 2007; Singh et al., 2008).

Despite the advances in TB chemotherapy, pregnancy and livebirth after diagnosis of genital tuberculosis has been reported to be low (Tripathy and Tripathy, 2002) and when it did occur was more likely to be an ectopic pregnancy or resulted in a spontaneous abortion (Bapna et al. 2005). Early diagnosis, with cultures positive for acid fast bacilli before the development of fulminating genital tuberculosis has been associated with higher pregnancy rates (John and Kukkady, 1999).

We report a case of Tuberculous salpingo-ophoritis who had right salingo-ophorectomy and anti-TB therapy; and subsequently achieved spontaneous conception and live birth managed in the University of Uyo Teaching Hospital, Uyo, South-South Nigeria. We also reviewed current literature on genital TB, its role in infertility and management. The need to exclude genital TB in recalcitrant infertility after routine work-up is emphasized.

CASE PRESENTATION

Mrs. OHE, a 32 year old housewife, Christian and resident in the suburbs of Uyo, South-south, Nigeria first presented at the gynaecological clinic of the University of Uyo Teaching Hospital with complaints of inability to conceive after 15 years of marriage despite adequate unprotected sexual intercourse. She attained menarche at 12 years of age, and menstruated for 5 days in a regular 26-28day cycle. The menstrual flow was normal. She had no dysmenorrhoea, abnormal vaginal discharge, vaginal itching or dyspareunia. There was no history of chronic cough, blurred vision, headaches, early morning vomiting, nausea, neck swelling, breast discharge nor abdominal swelling. There was no history of contact with person with chronic cough.

She had had two previous voluntary pre-marital termination of pregnancy at 8 weeks in private clinics without any post-abortal complications. These were for her current spouse though before marriage. She had not had any previous consultations for infertility in the formal health sector. She was not a known Hypertensive, diabetic nor sickle cell disease patient and had no family history of same.

Examination revealed a healthy looking woman. She was afebrile (T36.6°C), not pale, anicteric, well hydrated and had no pedal oedema. Her Body Mass Index was 23.4kg/m². She had good pulse of 80beats/minute and blood pressure of 100/80mmHg. There were no abnormal findings in the chest. Her abdomen was flat and had no areas of tenderness. There was no organomegaly. Vaginal examination showed a normal vulva and vagina

and normal sized mobile uterus. There was mild cervical excitation tenderness. The left adnexa was free but a cystic, firm and tender mass was felt in the right adnexa. The Pouch of Douglas was empty. Examination of spouse was unremarkable.

Investigation carried out included: Abdomino-pelvic USS which showed normal sized anteverted uterus, normal endometrial plate, normal sized left ovary and an enlarged right ovary with a right adnexal mass that measured 43x66mm. A Hysterosalpingogram showed no peritoneal spillage. Urinalysis and Seminal fluid analysis showed normal parameters. Her haematocrit was 42% and other blood indices and serum urea, creatinine and electrolytes were all within normal limits.

A diagnosis of Secondary Infertility due to tubal pathology was made.

Because of the adnexal mass, she subsequently had exploratory laparotomy after adequate pre-operative preparations. The intra-op findings were a bulky uterus, a patent left tube with spillage-tested with methylene blue, proximal right tubal mass extending into broad ligament and associated pyosalpinx and a right ovarian swelling that was part of a tubo-ovarian complex. The left ovary and tube looked grossly normal.

She had right total salpingo-ophorectomy with satisfactory haemostasis. The histology report of above specimens was diagnostic of tuberculous salpingo-ophoritis.

A chest x-ray carried out showed no lesion suggestive of pulmonary tuberculosis. She was discharged home in good post operative condition and referred to the Medical out-patient unit where she was treated for TB using the Directly Observed Treatment Short Course (DOTS) strategy.

Nine months after initial visit and commencement of anti-TB therapy, she achieved an intrauterine cyesis and was later delivered of a live male baby who weighed 3.0kg at 39wks by elective Caesarean section (CS) on account of prolonged infertility. Two years later she was delivered of a set of live twins (female and male) at term by an elective repeat CS. She was doing well but was lost to follow up two years after her last confinement.

DISCUSSION

The incidence of tuberculosis has decreased significantly worldwide during the last 30 years as a result of wide population vaccination, anti-tuberculosis chemotherapy and improvement of socio-economic conditions (Sin and Tang 1995). However, the pandemic of HIV has altered its incidence, morbidity and mortality in less developed countries. Although it is also observed that the incidence of female genital tuberculosis parallels the overall prevalence of tuberculosis in the population, the actual figure for the incidence of female genital tuberculosis is not available due to its perceived subtle presentation.

The disease is often discovered incidentally in many patients, and remains undiscovered in a large number of symptomless patients (Bapna et al., 2005). It is estimated that 5% of females presenting themselves in infertility clinics worldwide have genital tuberculosis and majority (80–90%) of women are in the age group of 20–40 years but older women are also known to harbour it (Malik, 2003). In the Nigerian middle belt and Pakistan, endometrial TB was found in 0.45% and 10% of infertility patients respectively (Ayesha et al. 2002; Ojo et al., 2008).

Female genital tuberculosis is almost always secondary to tuberculosis elsewhere in the patients' body. Usually, primary sites include the lungs, and sometimes kidneys, gastrointestinal tract, bones, and joints, but occasionally its part of a generalised miliary disease process. The mode of spread is usually haematogenous or lymphatic and occasionally via direct contiguity with an intra-abdominal or peritoneal focus. Eight to fifteen percent of women suffering from pulmonary tuberculosis (which may be active or inactive) also have genital tuberculosis (Sin and Tang, 1995). Primary tuberculosis infection of the female genital tract is extremely rare but it may occur when the male partner has active genitourinary tuberculosis or during orogenital sex and transmission takes place by direct inoculation at sexual intercourse and ascending spread of tubercle from the vagina, cervix and the vulva (Sin and Tang, 1995). Reports show that more than 80% of patients had either a history of an extragenital tuberculous lesion or evidence of such a lesion in the form of calcified abdominal glands, presence of *Mycobacterium tuberculosis* in the urine or X-ray appearance of pleurisy or of past or present pulmonary TB (Sin and Tang, 1995). The possibility of the rare sexually transmitted primary genital tuberculosis infection cannot be excluded in our patient as no evidence of extragenital tuberculosis was demonstrated.

Following secondary or primary infection, the Fallopian tubes are believed to be the initial and most frequently affected genital organ in pelvic mycobacterial infection followed by the endometrium. Quoted rates of affection of genital organs include: fallopian tubes, 95-100%, endometrium, 50-60%, Ovaries, 20-30%, cervix, 5-15%, vulva/ vagina, 1% and the myometrium, 2.5% (Qureshi). Cervical tuberculosis has been reported to simulate carcinoma of the cervix creating diagnostic dilemmas resolved by histology and acid fast staining of biopsy specimens (Qureshi et al., 2001; Lamba et al., 2002; Agrawal et al., 2009).

Female genital tuberculosis is often a silent disease sparing no age group, but majority of patients are in the reproductive age (Qureshi et al., 2001; Gatong et al., 2005). The four common presenting symptoms are involuntary infertility, menstrual disturbances, pelvic pain and swelling and occasional atypical presentations (Sin

and Tang, 1995). Infertility is the most common presentation with an incidence ranging from 40–75% (Jahroni, 2001; Tripathy and Tripathy, 2002). Tuberculosis may cause infertility in various ways. In the tubes tuberculosis may cause minimal damage and lead to ectopic pregnancy. Extensive damage to the tubes can lead to tubal blockage in 60% of cases. Peritubal adhesions and tuboovarian masses have been found in 47.2% of cases (Malik, 2003). In the endometrium, however, there may be an endometrial ulcer with accumulation of caseous material to form pyometra, intrauterine adhesions and partial obliteration of the cavity (Gatong et al., 2005).

Our patient had extensive tubal disease seen as a right tubo-ovarian complex that was excised at surgery.

The diagnosis of genital TB can be achieved through a high index of suspicion especially in patients at risk of the disease, in areas where it's common and with concurrent use of appropriate investigative techniques. High risk factors include previous pulmonary TB or contact with one, resident in high prevalent areas, low socioeconomic background, HIV positivity, weight loss and presence of symptoms. It may thus be considered when an at-risk patient presents with unexplained infertility, amenorrhoea, and pelvic infections not responding to conventional treatment (Haas, 2000). Our patient, however had no obvious risk factor and was only being evaluated routinely for secondary infertility and the findings could only best be described as fortuitous.

Mrs. OHE had tubal factor infertility which following laparotomy and excision of the tubo-ovarian complex was found to be tuberculous in origin at histology. She subsequently received antituberculous drugs using the WHO recommended DOTS strategy.

It has been reported that despite the advances in chemotherapy with the WHO's recommended DOTS strategy, pregnancy and livebirth after diagnosis of genital tuberculosis has been reported to be low (Haas 2000; Tripathy and Tripathy, 2002) and when it did occur was more likely to be an ectopic pregnancy or resulted in a spontaneous abortion (Tripathy and Tripathy 2002; Bapna 2005). These are obvious consequences of irreversible tubal and endometrial damage as well as pelvic peritonitis with adhesions. It has been documented that pregnancy rates are higher when tuberculosis is diagnosed early with positive cultures for acid fast bacilli before the development of fulminant genital TB (John and Kukkady, 1999). The success rate in assisted reproduction is also reduced as mycobacterium tuberculosis causes recurrent implantation failure by immune modulation of the endometrium and also by causing hormonal imbalance and by the release of antiphospholipid antibodies (Clark et al., 2001; Malik, 2003) Some authors feel it is mandatory to rule out genital TB in all patients undergoing IVF-ET (Malik, 2003).

Our patient presented with a 15year history of secondary infertility due to a tubal factor from undiagnosed genital tuberculosis, but was able to conceive following the removal of the damaged tube and ovary, and anti-TB drug therapy.

In conclusion, the case presented highlights the need to consider the possibility of genital tuberculosis in the aetiology of infertility even in apparently low risk patients. The resultant proper and adequate treatment may be all that is necessary to reverse a woman's sad story in a society that does not accept childlessness, and assisted reproduction is both not readily available and the cost of availing patients with services from the few centres available is prohibitive for many deserving couples. We also reiterate the need to send all surgical specimens for histopathological analysis as tuberculomas still remain a possibility even in apparently riskless patients. Moreover medical management of tuberculosis using the WHO's DOTS strategy is free in our environment and is highly effective.

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