CASE REPORT

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Genital tuberculosis in the third trimester of pregnancy. Case report and review of the literature

Tuberculosis genital en el tercer trimestre del embarazo. Comunicación de un caso y revisión de la literatura

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ABSTRACT

Tuberculosis is one of the main causes of death generated by an infectious agent worldwide. It usually affects the lungs, but under certain circumstances it can spread through the lymphatic or blood routes and affect distant tissues or organs. In pregnancy it can cause multiple maternal and neonatal complications. Despite being an important public health problem, there is currently insufficient evidence in the guidelines on the epidemiology, diagnostic flow chart and treatment of genital tuberculosis in pregnancy. A case of genital tuberculosis in the third trimester of pregnancy with a torpid evolution is presented, with difficulty in diagnosis and delay in the establishment of treatment.

Key words: *Mycobacterium tuberculosis*, Tuberculosis, genital, Pregnancy, third trimester

RESUMEN

La tuberculosis es una de las principales causas de muerte generada por un agente infeccioso a nivel mundial. Generalmente su afectación es pulmonar, pero bajo ciertas circunstancias puede diseminarse a través de vía linfática o sanguínea y afectar tejidos u órganos distantes. En el embarazo puede ocasionar múltiples complicaciones maternas y neonatales. A pesar de ser un problema importante de salud pública, en la actualidad no existe suficiente evidencia en las guías sobre la epidemiologia, flujograma diagnóstico y tratamiento de la tuberculosis genital en el embarazo. Se presenta un caso de tuberculosis genital en el tercer trimestre del embarazo con evolución tórpida, dificultad para el diagnóstico y retraso en la instauración del tratamiento.

Palabras clave: *Mycobacterium tuberculosis*, Tuberculosis genital, Embarazo, tercer trimestre

Introduction

Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis*. It is transmitted through the air, generally with pulmonary involvement, although it can be disseminated by lymphatic or blood routes and affect distant tissues and organs[1]. Considered an important public health problem worldwide[2], it affects vulnerable populations mainly in developing countries, with Brazil (33.1%), Peru (13.4%) and Mexico (10.3%) having the highest percentage of cases in Latin America[3].

Genital tuberculosis (GTB) is the invasion of *M. tuberculosis* into the female genital tract, usually secondary to pulmonary tuberculosis, and commonly involves immunocompromised patients or those with chronic diseases, including human immunodeficiency virus (HIV)[2]. The fallopian tubes are the most affected (90-100%), followed by the uterus (70%), ovaries (30%), cervix (10%) and rarely the vulva and vagina (1%)[2]. It was reported for the first time in 1744 by Morgagni in autopsies performed on young women who died of peritonitis[4].

The incidence of tuberculosis in women of childbearing age and pregnant women is directly related to the prevalence in the general population and to the prevalence of HIV[5]. Most countries do not systematical-

ly screen for tuberculosis during pregnancy, nor do they report on the pregnancy status of cases of such infection, so the incidence of tuberculosis in pregnancy, whether latent or active, is not well determined worldwide[1]. A review of available data suggests that the prevalence of active tuberculosis in pregnant women ranges from 0.06-0.25% in low-burden countries, while in high-burden countries the rates fluctuate between 0.07-0.5%[6].

The incidence of GTB is unknown, due to unreported, asymptomatic cases and the lack of highly sensitive diagnostic tests[3]. A rare condition, there is not enough evidence on the epidemiology in pregnant women. It is known that maternal tuberculosis is associated with a poor maternal and fetal prognosis and can lead to mortality in both[7]. In pregnant women, the risk factors are the same as in the general population, such as recent exposure to a patient with active tuberculosis or living or working in an environment with a high risk of contagion. Immunological variations during pregnancy may increase susceptibility to tuberculosis infection, such as suppression of the inflammatory response of T-helper lymphocytes[1].

We present a case of genital tuberculosis in the third trimester of pregnancy, whose manifestation was atypical and of torpid evolution; the difficulty in diagnosis delayed treatment.

Case report

The patient was a 20-year-old woman, nulliparous, with gestation of 33 weeks 5 days. She denied previous pathologies or family history of tuberculosis; she had no surgical history.

Five days before admission, she started lower hemiabdomen pain when moving, accompanied by sporadic cramping pain. One day before admission, general malaise and thermal rise were added. On admission she had general malaise, bloody vaginal discharge, and colicky abdominal pain.

On physical examination, vital signs were stable, the fetus was reactive and the hemogram was normal, so she remained under observation. Six hours later she presented hypotension, tachycardia and tachypnea. The fetus showed tachycardia and decreased fetal movements; the fetal non-stress test was non-reactive on two occasions.

At medical consultation, it was considered possible sepsis of urinary origin, so antibiotic therapy was started. Due to persistent hypotension, tachycardia, tachypnea, bradycardia and lack of fetal reactivity, a diagnosis of chorioamnionitis and acute fetal distress was considered and the patient was scheduled for emergency cesarean section.

As operative findings, free fluid with fibrin was found in the parietocolic areas predominantly on the left and in the prevesical region (150 mL), left tubal abscess, dilated, indurated and deformed left uterine tube with fibrin in the fimbriae (Figure 1). The tubal abscess was thickened (crusted) with a granular surface (millet granules). Cesarean section was performed and a live newborn was delivered. Following left salpingectomy, peritoneal cavity was washed and peritoneal and omentum biopsies were taken for anatomopathological study.

The patient initially presented clinical improvement. However, the following day she complained of severe abdominal pain accompanied by tachycardia, tachypnea and fever that did not respond to antipyretics. Evaluated by the intensive care unit, rotation of antibiotics, cultures and chest X-ray were recommended, which showed opacity in the left pulmonary base.

As the symptoms persisted, the possibility of endometritis was raised, and hysterectomy was indicated. During surgery, the uterus was found to be 18 cm, soft, pale, friable, with bad odor; the right tube and both ovaries were edematous with fibrin on their surface. There were 200 mL of serosanguinolent ascitic fluid (Figure 2). Subtotal abdominal hysterectomy, right salpingectomy, left oophorectomy, peritoneal cavity lavage and placement of Penrose drain were performed. Broad spectrum antibiotic therapy was continued.

On the third day of her last postoperative period, treatment was indicated as probable extrapulmonary tuberculosis, showing clinical improvement on the third day of specific treatment consisting of Rifampicin 150 mg/Isoniazid 75 mg/Pyrazinamide 400 mg/Ethambutol 275 mg for 2 months plus Rifampicin 150 mg/Isoniazid 75 mg for 10 months.

Figure 1. Posterior wall of the uterus and dilated left uterine tube.

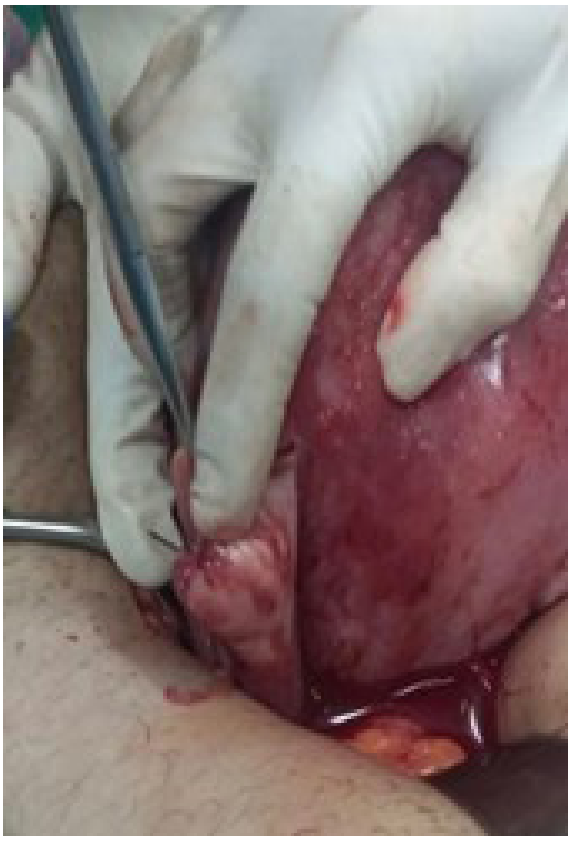
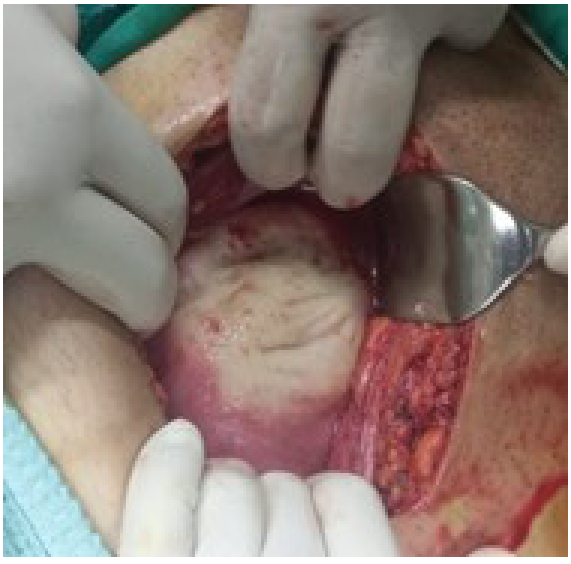


Figure 2. Friable and pale uterus.



Pathology reports were caseating left tuberculous salpingitis, caseating tuberculous epiploiditis, tuberculous peritonitis, caseating granulomatous oophoritis with tuberculous-like giant cells.

The newborn received prophylactic treatment with isoniazid for 6 months and all his tests were negative for TB.

Discussion

Tuberculosis is the second leading cause of death due to an infectious agent worldwide[8]. Genital involvement is infrequent and is often underestimated due to the fact that there are no precise data on incidence and even less in pregnant women. As Salazar mentions, there are only data in pregnant women with tuberculosis in general, reaching 0.5%[6], a percentage that is believed to be lower if we talk about GTB in pregnant women.

Wang et al. mention that hormonal changes during pregnancy, especially those of estrogen and progesterone, inhibit the immune function of lymphocytes and reduce maternal immunity. In addition, the increase in microvascular permeability in pregnant women allows *M. tuberculosis* to enter the bloodstream and compromise any organ[9], as in our patient who did not present previous pulmonary disease but did have genital tract involvement.

GTB lacks specific clinical features and may mimic other diseases. Some symptoms are decreased appetite and weight, fever, night sweats, chills, and weakness[1]. In our patient, the symptoms were nonspecific, which led us to think of other more frequent obstetric infections.

Kesharwani[10] and Sharma[4] mention that in almost all cases of GTB the fallopian tubes and endometrium are affected, which coincides with our surgical findings of severe tubal damage. Infertility was not manifested in our case because she probably acquired the disease during pregnancy or there was latent tuberculosis that due to immunosuppression generated dissemination of the disease towards the tubes, forming the left tubal abscess.

Genital peritoneal tuberculosis must be part of the diagnosis of tumors or adnexal involvement, being variants the 'ascitic type', 'fibrotic type', 'dry plasticized type' and the combination of the three[6]. In the first surgical intervention we found ascitic fluid, nodules in the uterine tube and millet granules in the peritoneum and omentum, in addition to a crusted appearance. Considering the short time of symptomatology, it was presenting in the form of the three variants, as described by Brasile in his work[11]. Miele mentions that the gold standard for the diagno-

sis of tuberculosis is the presence of *M. tuberculosis* bacillus in the tissues[1], a difficult fact when it is a GTB in which the sample is obtained by surgery. In our case, when the cesarean section was performed and the findings were evident, we took advantage of the opportunity to take the sample with the final diagnosis obtained by the anatomic pathology service.

In a review, Wang concludes that the onset of symptoms is often in the second trimester of natural pregnancy, different from what happened in the case of our patient, where symptoms occurred in the third trimester[9]. However, among the fetal complications there is an increased risk of spontaneous abortion and preterm delivery, fetal growth restriction, stillbirth, and congenital tuberculosis. Our patient presented preterm delivery and the low-birth-weight newborn did not present congenital tuberculosis.

Patients usually have a favorable prognosis with rapid and effective respiratory support and anti-tuberculosis therapy[2], which was the case with our patient who, after starting treatment with anti-tuberculosis drugs, began her clinical improvement.

Our study shows that the time from onset of symptoms to diagnosis is relatively long, suggesting that it is difficult to diagnose the disease and that misdiagnosis is common in the early stages. Living in a high-incidence country, this diagnosis should be considered in patients with nonspecific symptoms. Even Wang[9] recommends that any woman living in a country with a high incidence of tuberculosis such as ours should be screened for active or latent tuberculosis and treated before becoming pregnant.

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