CLINICAL CASE

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Beyond the lungs: The gynecological aspect of tuberculosis

Más allá de los pulmones: La cara ginecológica de la tuberculosis

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ABSTRACT
Female genital tuberculosis is a rare form of extrapulmonary TB that is often mistaken for other gynecological conditions due to its nonspecific presentation. This case report describes a 24-year-old woman presenting with pelvic pain, intermenstrual bleeding, and persistent ascites. Initial tests were inconclusive, but an endometrial biopsy revealed granulomas with Langhans-type giant cells and a positive PCR result for Mycobacterium tuberculosis. Delayed diagnosis is common due to the low sensitivity of the tests. This case highlights the importance of considering genital TB in endemic areas and of using diagnostic methods such as PCR to improve detection.
Keywords: Endometrial tuberculosis, gynecology, *Mycobacterium tuberculosus*

RESUMEN
La tuberculosis genital femenina es una forma infrecuente de TB extrapulmonar que suele confundirse con otras patologías ginecológicas por su presentación inespecífica. El caso describe a una mujer de 24 años con dolor pélvico, sangrado intermenstrual y ascitis persistente. Los estudios iniciales fueron poco concluyentes, pero la biopsia endometrial mostró granulomas con células gigantes tipo Langhans y PCR positiva para *Mycobacterium tuberculosis*. El diagnóstico tardío es común debido a la baja sensibilidad de las pruebas. Este caso resalta la importancia de considerar TB genital en zonas endémicas y de emplear métodos diagnósticos como PCR para mejorar la detección.
Palabras clave: Tuberculosis endometrial, ginecología, *Mycobacterium tuberculosis*

Introduction

Tuberculosis (TB) is a disease caused by mycobacterium tuberculosis, a Gram-positive, aerobic bacillus that can affect any tissue in the human body. It is one of the leading public health problems, with approximately 1.3 million deaths and more than 10 million new cases annually[(1)]. Mycobacterium tuberculosis most commonly affects the lungs, but it can affect other organs. Among its extrapulmonary forms is female genital tuberculosis, which accounts for 9% to 27% of these cases, primarily affecting women of reproductive age. This form of TB most frequently involves the fallopian tubes (90%), followed by the endometrium (70%) and the ovaries (25%)[(2, 3, 4)]. Clinically, it usually presents with nonspecific symptoms such as chronic pelvic pain and menstrual irregularities; however, diagnosis is often delayed, as it can mimic various gynecological conditions.

Clinical case

A 24-year-old female patient from Pasco with a history of contact with a family member diagnosed with pulmonary tuberculosis. She reports an eight-month history of illness characterized by moderate, oppressive pain in the hypogastrium associated with intermenstrual bleeding, and a weight loss of 5 kg over the past 4 months. During the medical evaluation, the patient presented with marked pallor of the skin and mucous membranes; a slightly distended abdomen with borborygmi present; dullness on percussion in the hypogastrium; and tenderness on palpation in the lower right quadrant without signs of peritoneal irritation.

Among the tests performed, transvaginal ultrasound revealed a 26-mm thickened, heterogeneous endometrium with nodules smaller than 10 mm and a cervical length of 32 mm, with ultrasonographically normal ovaries and, incidentally, abundant ascites in the Douglas pouch. Pelvic MRI showed free fluid in the pelvic and peritoneal cavities without apparent neoplastic or inflammatory lesions, with a non-thickened or distended endometrium and a homogeneous myometrium without focal lesions (Figure 1). Abdominal ultrasound confirmed moderate diffuse ascites. The patient received symptomatic analgesic treatment, but as symptoms persisted and the amount of ascitic fluid increased, diagnostic paracentesis and endometrial biopsy were performed. The analysis of the ascitic fluid was inconclusive, but the endometrial biopsy revealed chronic granulomatous endometritis with Langhans-type giant cells (Figure 2). For this reason, the investigation was expanded to include polymerase chain reaction (PCR) testing for the Mycobacterium tuberculosis complex in the endometrial tissue, which yielded a positive result. (Figure 3)

Upper gastrointestinal endoscopy was performed, revealing nodular and erythematous pangastritis; a biopsy showed moderate chronic gastritis with moderate activity, as evidenced by complete intestinal metaplasia in 30% of the sample. (Figure 4)

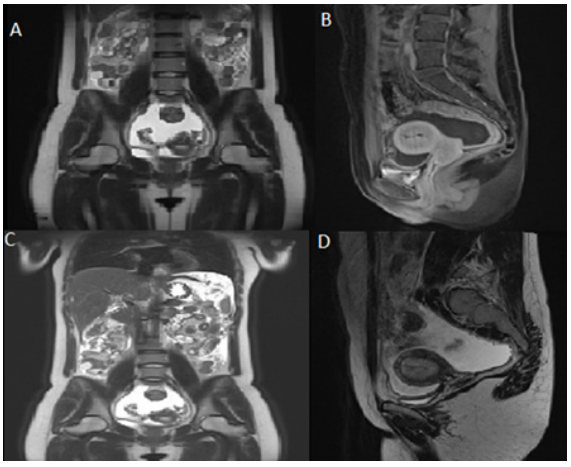

Figure 1. Abdominal MRI: The T2-weighted sequence (A) shows hyperintensity in the pelvic region, which is consistent with the findings on the Dixon (B), HASTE (C), and TSE (D) sequences, suggesting free fluid in that area; however, no lesions characteristic of tuberculosis or other pelvic morphological abnormalities are evident.

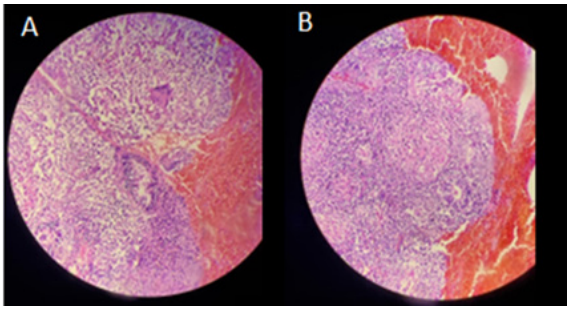

Figure 2. Endometrial biopsy, showing a multinucleated giant cell (A) and a granuloma containing Langhans-type giant cells with a granulomatous pattern suggestive of tuberculosis (B).

Based on these findings and the aforementioned epidemiological history, a diagnosis of endometrial tuberculosis was established, and tuberculosis treatment was initiated according to the technical guidelines of the Peruvian Ministry of Health. The patient was followed up one month into treatment with a favorable course and a reduction in her symptoms without major complications. At two months, the patient was reevaluated and reported that her symptoms had improved substantially, with increased appetite and weight gain, reduced nausea, and decreased ascites. A subsequent follow-up was conducted with the patient, during which she reported that the abdominal swelling had completely subsided, with only occasional discomfort if she remained in the supine position for an extended period, and she denied any further symptoms. Additionally, the patient was advised to undergo liver function tests and a complete blood count, both of which fell within normal ranges.

Discussion

Endometrial tuberculosis is a rare form of extrapulmonary TB and often goes unrecognized due to its insidious clinical presentation. It frequently mimics other benign gynecological conditions or even abdominal-pelvic neoplastic conditions, which hinders early diagnosis. The clinical manifestations of female genital TB vary considerably. Classically, it may present with infertility, chronic pelvic pain, dyspareunia, or menstrual irregularities, without specific signs[5, 6, 7]. In the study by Sarkar et al., they described a case in which refractory infertility was the sole manifestation, attributed to tubal and endometrial damage caused by TB that persisted after multiple failed attempts at in vitro fertilization [8]. Furthermore, in the study by Agbodande AK. a

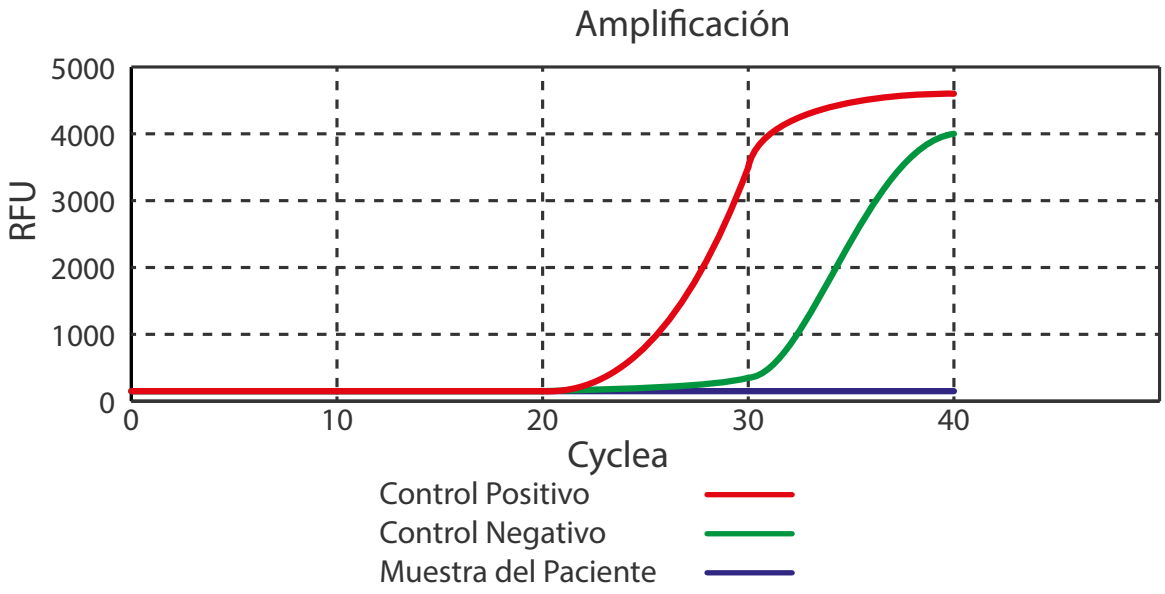

Figure 3. The graph shows the fluorescence emitted by the amplified products from the processed sample. The positive control is ribonucleic acid from the M. tuberculosis complex. The negative control contains no ribonucleic acid and does not produce fluorescence.

Figure 4. Biopsy of the gastric antrum showing deep and moderate chronic superficial inflammation without lymphocytic infiltrates and with intestinal metaplasia present in 30% of the sample.

72-year-old postmenopausal patient was reported whose predominant symptom was chronic leukorrhea; pelvic ultrasound revealed a thickened endometrium with a hyperechoic appearance suggestive of an endometrial tumor, but subsequent curettage with biopsy revealed caseating granulomatous endometritis typical of tuberculosis[9].

In this case, the patient was young and presented not only with nonspecific gynecological symptoms but also with persistent ascites, a presentation that mimicked malignant or inflammatory abdominal disease. A review of the topic by Tjahyadi et al. analyzed the most common symptoms and signs in various studies, including lower abdominal pain, pelvic mass, leukorrhea, and infertility[10]. A case reported in Brazil by Garci et al. describes a presentation similar to that of the patient presented here, who presented with lower abdominal pain of 6-month duration, ascites, and weight loss[11]. These symptoms, combined with elevated CA-125 levels and imaging findings consistent with peritoneal carcinomatosis, led them to perform a laparoscopic biopsy, which confirmed the diagnosis of tuberculosis based on the presence of whitish nodules resembling millet grains—a finding highly suggestive of tuberculosis—and histopathological confirmation of the disease.

In the same report, the patient was followed up 3 months after the start of tuberculosis treatment, with cessation of vaginal bleeding and marked clinical improvement, and she remained asymptomatic at 1 year. Our patient received the treatment established by current guidelines in Peru, consisting of isoniazid 300 mg, rifampicin 600 mg, pyrazinamide 1500 mg, and ethambutol

1200 mg for 2 months, followed by isoniazid 300 mg and rifampicin 600 mg for an additional 4 months. The patient reports that after two months of treatment, her symptoms decreased markedly, with the sporadic pain and nausea disappearing; she gained 3 kg in weight and showed an improvement in her overall appearance.

Given the suspicion of peritoneal tuberculosis in the patient, a PCR test was performed on the ascitic fluid, which came back negative. For the reasons mentioned above, the definitive diagnosis of genital tuberculosis tends to be made late due to the insidious clinical presentation, the low sensitivity and specificity of TB diagnostic tests, and the low positivity rate in Koch's bacillus (KB) tests of biopsies and pelvic fluids[12].

The most widely performed tests are the observation of BK in samples obtained from vaginal secretions or biopsies of endometrial lesions or polyps and the analysis of Mycobacterium tuberculosis complex DNA via polymerase chain reaction (PCR). Studies conducted in India found a KB positivity rate of only 8.3% in the cases analyzed, with PCR sensitivity and specificity of 57.1% and 90.5%, respectively, in one study, and a KB positivity rate of 2.09% in endometrial aspirates in another study[13, 14, 15].

When a diagnosis of tuberculosis cannot be established clinically or via KB or PCR, an invasive diagnostic laparoscopy or hysteroscopy may be performed to obtain a biopsy of any lesions found. Diagnostic laparoscopy is a valuable diagnostic tool in cases of uncertainty in patients with suspected genital tuberculosis; it can identify tubercles in the fallopian tubes or peritoneum, granulomas, and signs such as congestion, edema, and adhesions. However, it is an invasive procedure that must be discussed with the patient. Studies have shown that laparoscopy is a useful tool for visually and histopathologically determining the cause of symptoms in women with nonspecific symptoms and negative results in both KB and molecular tests[16, 17].

Conclusion

This case highlights that genital TB can present in a misleading manner, mimicking benign gynecological conditions, nonspecific infections, or even disseminated malignant diseases, thereby hindering early diagnosis; for this reason, it should be included in the differential diagnosis in countries with high TB prevalence, such as Peru. In addition, diagnostic tests with higher diagnostic yield, such as PCR, should be used to reduce the number of false negatives.

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Ethical responsibilities: This clinical case does not violate the rights of the patient mentioned and has been conducted with informed consent.

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