

Tuberculosis mimicking cervical carcinoma - case report

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Summary

Tuberculosis is a chronic bacterial infection that primarily results in pulmonary disease. Although there are several reported cases of extra-pulmonary tuberculosis, very few reports have described this disease in the female genital tract. We present a case involving a 67-year-old woman who presented with vaginal discharge, abdominal discomfort, and a pelvic mass in 2006. Clinically, cervical carcinoma was suspected, but pathologic diagnosis eventually revealed tuberculosis of the cervix. Tuberculosis is associated with a significant inflammatory reaction, which may mimic a gynecologic malignancy on exam or with diagnostic imaging. Despite the rare incidence, tuberculosis of the cervix should be considered in the differential diagnosis when cervical carcinoma is initially suspected.

Key words: Tuberculosis; Gynecologic oncology; Diagnosis; Treatment.

Introduction

Tuberculosis (TB) originates from *Mycobacterium tuberculosis*, and is an acute or chronic bacterial infection that primarily affects the lungs. In 2005, a total of 14,093 tuberculosis cases were reported in the United States [1]. The primary symptoms include coughing, chest pain, dyspnea, weight loss, and fever [2, 3]. Pediatric, elderly, and immuno-compromised populations are the most susceptible to contracting tuberculosis. Patients from third world countries are at greater risk for developing this disease [4]. If left untreated, nearly half of tuberculosis patient cases are fatal.

Tuberculosis is associated with an intense local inflammatory response, which appears to be critical to the disease's pathogenesis [5]. The disease primarily causes pulmonary lesions, although extra-pulmonary spread may involve the kidneys, bones, lymph nodes, and brain [6, 7]. However, the incidence of TB in the female genital tract is extremely low, comprising less than 2% of all extra-pulmonary cases in the United States [7-10].

Manoromana *et al.* reported on a 32-year-old woman who initially presented with gestational trophoblastic disease. The patient was successfully treated with surgery and chemotherapy but two years later she developed bilateral cervical lymphadenopathy [7]. Since TB is very rarely associated with the female genital tract and the inflammatory reaction can resemble a gynecologic malignancy [5, 9, 11; 12], TB may not be included in the differential diagnosis. We present a rare TB case involving a patient who presented with vaginal discharge, abdominal discomfort, and a pelvic mass that was initially suspicious for cervical carcinoma.

Case Report

A 67-year-old nulligravida Filipino-American woman presented with renal insufficiency, abdominal discomfort, and a pelvic mass in October 2006. The patient reported two recent episodes of white to pinkish vaginal discharge, and intermittent vaginal bleeding. Her laboratory data revealed sodium 133 mmol/l, potassium 4.5 mmol/l, BUN 32 mg/dl, creatinine 2.9 mg/dl, and serum calcium 12.5 mg/dl. The patient's PTH was < 10 pg/ml. She had a history of hypertension, and hyperlipidemia.

In October 2006, the patient had a pelvic ultrasound that demonstrated an enlarged and heterogeneous uterus, indicative of diffuse adenomyosis or multiple fibroids. She was then referred to our gynecologic oncology service. A follow-up MRI demonstrated a 10 x 6 cm uterus, without evidence of any free fluid or pelvic sidewall adenopathy (Figure 1). The patient's abdominal sonogram showed no evidence of hydronephrosis and her bone scan was normal. Pelvic exam revealed an ulcerating cervical and upper vaginal lesion that was suspicious for cervical carcinoma.



Figure 1. — MRI of the pelvis without contrast (T1-weighted sequence). The uterus is enlarged and diffusely heterogeneous, measuring approximately 10 cm x 6 cm.

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g. 2a

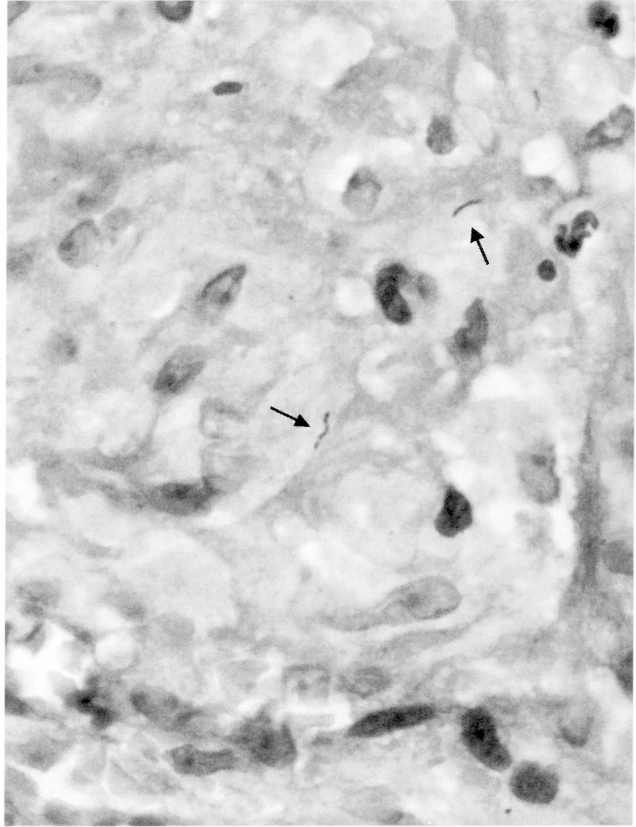
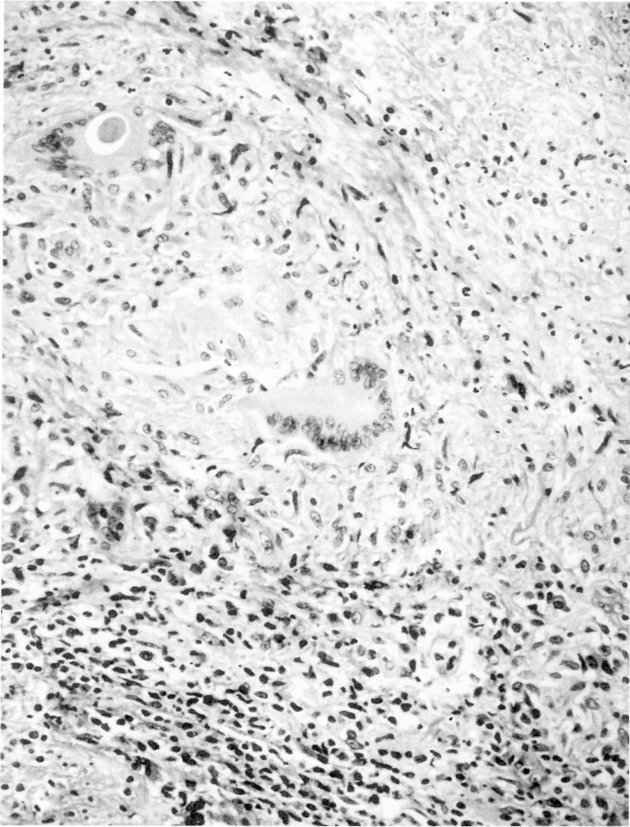


Fig. 2b

2c

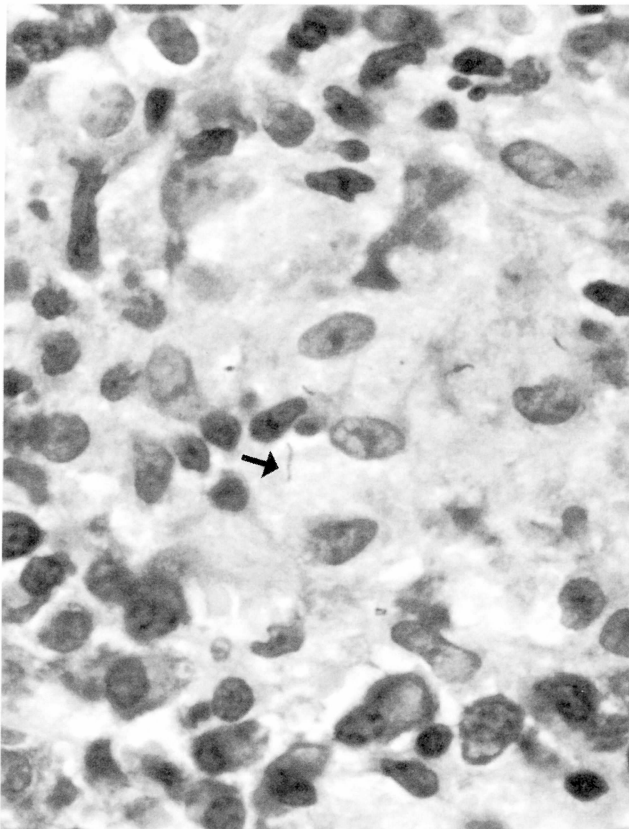


Figure 2a. — (Granuloma): Cervical biopsy with granulomatous inflammation, necrosis, and multinucleated giant cells.

Figure 2b. — Arrows demonstrate rod-shaped acid-fast bacilli, which were easily identified in areas of granulomatous inflammation (oil immersion).

Figure 2c. — (Granuloma-close up): Arrow demonstrates additional acid-fast bacillus (oil immersion).

Pathological findings

A cervical biopsy under anesthesia was performed in October 2006. Microscopic examination revealed multiple pieces of fibrovascular stromal tissue containing numerous necrotizing granulomas. There were also several multinucleated giant cells and abundant acute inflammatory exudate. There were no malignant features or fungal organisms present (Figures 2a-c). AFB, GMS, and PAS stains demonstrated numerous acid-fast bacilli within the regions of granulomatous inflammation. A probable diagnosis of cervical tuberculosis was made. The patient then underwent an office cervical biopsy for TB culture. The culture confirmed the presence of *Mycobacterium tuberculosis* and a definitive diagnosis of cervical TB was made. The patient was then referred to an infectious disease specialist and treated with anti-tuberculin therapy comprised of INH, rifampicin, ethambutol and pyrazinamide. She has since responded to therapy and done well with three months of follow-up.

Discussion

Tuberculosis is one of the deadliest bacterial infections worldwide, resulting in nearly two million deaths annually [1]. The disease is transmitted from person to person, usually by exposure to aerosolized droplets from an infected individual or from direct infection of the kidney and lower urinary tract [13]. In cases where TB infiltrates the female genital tract, there may be initial involvement in the endosalpinx that can spread to the peritoneum, endometrium, ovaries, cervix, and vagina [14].

Since TB is primarily a pulmonary condition and clinical cases involving the female genital tract are very rare, the condition may be omitted from the differential diagnosis [8, 10]. Abdominal pelvic masses, ascites, and in the present case, hypercalcemia and a cervical/vaginal mass may be the initial findings [10, 12, 15, 16]. Primary treatment consists of anti-tuberculin therapy.

The patient in this current case was born in the Philippines and moved to Guam before immigrating to the United States. It is noteworthy that her husband was diagnosed with testicular TB 30 years ago and underwent removal of a testicle at a Filipino community hospital. However, we can only speculate on any connection between their respective diseases.

Despite the rare incidence, TB of the female genital tract would be more readily diagnosed if this condition was considered in the evaluation of all infertile patients, regardless of risk status [8, 12]. Infectious disease consultation is recommended following a definitive diagnosis.

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