

Isolated tuberculous epididymitis masquerading as a scrotal tumor

Wei-Chieh Miu¹, Hui-Ming Chung², Yung-Cheng Tsai², Fu-Jinn Luo³

¹Department of Infection, ²Department of Urology, and ³Department of Pathology, Mennonite Christian Hospital, Hualien, Taiwan

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This report is of a patient with isolated tuberculous epididymitis presenting with a scrotal tumor. A 65-year-old man presented with a rapidly growing, painless mass over his right testicle. A non-tender indurated tumor was identified in the right hemi-scrotum. Digital rectal examination detected a moderately enlarged, elastic prostate that was consistent with benign prostatic hyperplasia. Urinalysis was normal without pyuria. Complete blood count, biochemistry, prostate specific antigen, alpha-fetoprotein, and beta-human chorionic gonadotropin were all within normal levels. Chest X-ray was clear. Scrotal ultrasonography and computed tomography scan showed a tumor in the right testicle involving the epididymis with hydrocele, but the renal images were normal. The diagnosis was right epididymo-testicular tumor. The right testis was removed. Postoperative pathology showed tuberculous epididymitis. Subsequent urine mycobacterial culture was negative. The patient had an uneventful postoperative course. The patient was treated with standard 9-month triple anti-tuberculosis medications, and remained stable at follow-up.

Key words: Orchiectomy; Scrotum; Testicular hydrocele; Testicular neoplasms; Therapeutics; Tuberculosis, male genital

Introduction

While genitourinary tuberculosis (TB) accounts for up to 30% of extrapulmonary TB, epididymal involvement accounts for only about 20% of genitourinary TB [1,2]. It has been postulated that TB epididymitis almost always results from a tuberculous lesion in the prostate, which is usually secondary to renal TB [3]. Isolated tuberculous epididymitis (ITE) without evidence of renal involvement is, therefore, rare and difficult to diagnose. ITE can potentially be cured by anti-TB medications if diagnosed correctly, and surgical resection is usually reserved for those patients who do not respond to medical treatment [4]. However, ITE may present with a clinical picture similar to that of a scrotal neoplasm. Clinicians need to be aware of this unique disease entity to avoid inadvertent surgery. This report is of a patient with ITE diagnosed after

undergoing a high inguinal orchiectomy for a suspected testicular tumor.

Case Report

A 65-year-old man presented to the Mennonite Christian Hospital, Hualien, Taiwan, in 2007 with a rapidly growing painless tumor over his right testicle for 1 month. He had no other symptoms and no major chronic diseases.

Physical examination revealed an irregularly shaped non-tender solid tumor, 3 cm long, located in the right hemi-scrotum. Digital rectal examination detected a moderately enlarged, elastic prostate that was consistent with benign prostatic hyperplasia. Urinalysis was normal without pyuria. Complete blood count, biochemistry, prostate specific antigen, alpha-fetoprotein, and beta-human chorionic gonadotropin were all within normal limits. Chest X-ray was clear. Ultrasonography and computed tomography (CT) scan showed a tumor in the right testicle involving the epididymis and a hydrocele (Fig. 1A), but the kidneys were normal in appearance (Fig. 1B).

Corresponding author: Dr. Hui-Ming Chung, Department of Urology, Mennonite Christian Hospital, No. 44, Min-Chuan Road, Hualien 970, Taiwan.
E-mail: hmchung@mch.org.tw

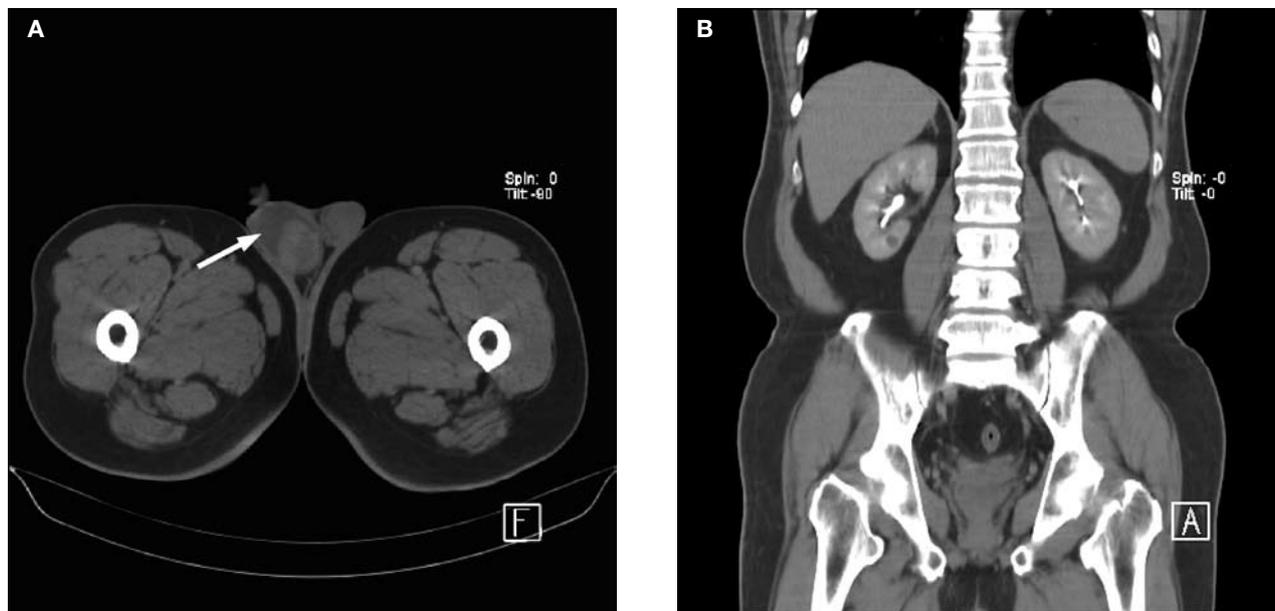


Fig. 1. Computed tomography scans showing (A) a right testicular tumor involving the epididymis and a hydrocele (arrow); and (B) normal appearing kidneys, consistent with the clinical picture of isolated tuberculous epididymitis.

After a tentative diagnosis of right testicular tumor was made, the patient underwent a right high inguinal orchiectomy. Pathological examination of the epididymis showed caseating granulomatous reaction and Langhan's giant cells, which were typical of tuberculous infection (Fig. 2). The tissue was positive for acid-fast bacilli. Subsequent urine culture and sputum culture was negative for acid-fast bacilli. The postoperative course was uneventful. The patient was treated with standard 9-month triple anti-TB medications, and remained stable at follow-up after 10 months.

Discussion

Genitourinary TB is the second most common cause of extrapulmonary TB [1]. The infecting bacilli, *Mycobacterium tuberculosis*, primarily infects the kidneys, then spreads down the ureter and subsequently into the bladder and/or prostate [3]. Epididymal TB accounts for only around 20% of genitourinary TB [2]. It is generally agreed that most epididymal TB results from retrograde spread from the prostate, although hematogenous or lymphatic invasion are also possible [5,6]. Testicular involvement may occur later by direct invasion from the epididymal lesion [7]. ITE is, therefore, defined as TB epididymitis without clinical or laboratory evidence of renal involvement [8], as was observed in this patient. However, some authors argue that there is no true ITE because intravenous pyelography or microscopic examination of the urine may

fail to diagnose a renal lesion [8], and the sensitivity of urine culture can be as low as 50% [9]. It has also been observed in earlier reports that some patients with ITE developed renal TB or positive urine culture at a later date [10].

ITE is more common in younger adults. In a review of 40 patients with ITE, the median age was 32 years (interquartile range, 21-37 years) [8]. However, this patient was 65 years old. The most common clinical presentation of ITE is painful scrotal swelling (40%), followed by scrotal sinus (20%), acute

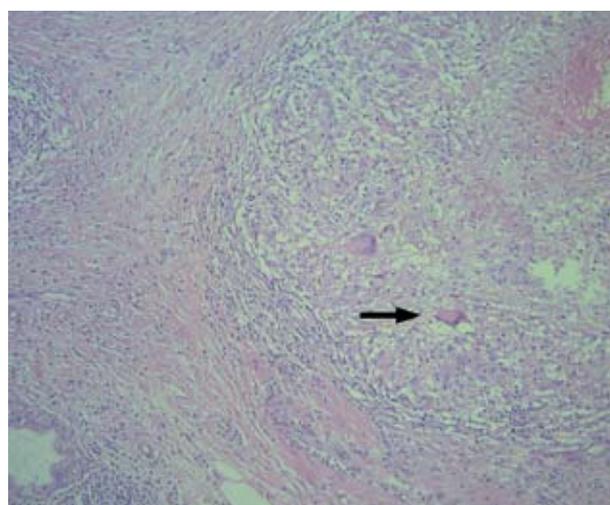


Fig. 2. Pathology specimen from the epididymis showing caseating granulomatous reaction and Langhan's giant cells (arrow) typical of tuberculous infection (hematoxylin and eosin stain, $\times 100$).

epididymo-orchitis (10%), infertility (10%), and hematospermia (5%) [8]. Painless scrotal swelling, which was the major presentation for this patient, was not common in Viswaroop et al's large series of ITE [8]. Interestingly, painless scrotal mass has been described as a common symptom in some case reports of tuberculous epididymitis (not ITE) [11]. Irritative voiding symptoms are not as commonly associated with ITE as they are with other genitourinary TB [7,12], as noted for this patient. ITE typically occurs unilaterally, but a rate of bilateral involvement of 12.5% has been reported [8].

There are no specific findings of ITE using common diagnostic imaging modalities, including scrotal ultrasonography, CT scan, or magnetic resonance imaging. Imaging studies may show diffuse or focal heterogeneous lesions in the enlarged epididymis, with or without hydrocele, septation, extratesticular calcification, scrotal abscess, or scrotal sinus tract, which are also common findings of other chronic inflammatory processes or testicular tumor [7,8,13]. Therefore, the preoperative diagnosis of ITE depends on a high index of suspicion. A definitive diagnosis of ITE is usually based on pathological material obtained from fine-needle aspiration cytology or surgical resection of the epididymis [4,8,12].

ITE is potentially curable with anti-TB medications, with a combined oral regimen of rifampin, isoniazid, ethambutol, and pyrazinamide given daily. The suggested duration of therapy varies from 2 months to 2 years [3,4], although a regimen of 9 to 12 months is generally accepted [8]. However, some authors recommend surgical intervention if there is no sign of resolution within 2 months or if an intrascrotal abscess is identified [14,15]. Intratunical rifampin injection has been suggested as an effective alternative therapy that may enable the side effects of oral therapy to be avoided [4]. Surgical resection is usually reserved for those patients who do not respond to medical therapy. To avoid inadvertent epididymo-orchietomy, which happened for this patient, fine-needle aspiration cytology or biopsy should be performed for all men with a suspected epididymo-testicular lesion.

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