An Unusual Presentation of Primary Male Genital Tuberculosis

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Urogenital tuberculosis is a rare disease; however, it is the second most common location for tuberculosis after the lung. Currently, incidence of urogenital tuberculosis is increasing due to factors such as a higher prevalence of immunosuppression (especially that caused by human immunodeficiency virus infection) and drug abuse. Herein a new case of male genital primary tuberculosis is reported presenting as a scrotal tumor; the originality of this observation lies in its unusual pseudotumor form.
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It is estimated that nearly one-third of the world's population is infected with *Mycobacterium tuberculosis*. Genitourinary tuberculosis is not common, and it is considered a severe form of extrapulmonary tuberculosis. Pseudotumor epididymal tuberculosis is exceptional and is rarely reported in the literature. It is, therefore, difficult to distinguish between epididymal tuberculosis and a true testicular tumor. Although chemotherapy is the mainstay of treatment, surgery in the form of ablation or reconstruction may be unavoidable.

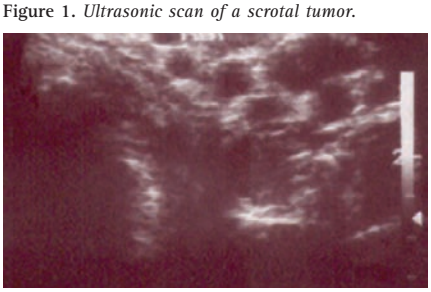
Case Report

A 57-year-old man presented to the urology department with a chief complaint of a large left scrotum of 4 months' duration. He had no past medical history of tuberculosis; however, the patient reported an unencrypted weight loss since the start of symptoms. During urological consultation, the patient reported no prior episodes of orchiepididymitis. He denied any history of urinary tract infections, nephrolithiasis, or other genitourinary complaints. He had a history of tobacco use, but no occupational/chemical exposure. He denied dysuria, fevers, chills,

nausea, vomiting, flank pain, or changes in bowel movements. On examination, we noted an increase in the volume of the left testis with a large scrotal mass and no individualized epididymis. There were no signs of inflammation so it was assumed to be a solid scrotal mass. A digital rectal examination (DRE) showed that the prostate was soft with an estimated size of 40 cc. The remainder of the physical examination was otherwise unremarkable. Recent routine blood tests, including hemoglobin, hematocrit, liver function tests, and coagulation studies, were within normal limits. Serum prostate-specific antigen (PSA) level was normal. Urinalysis revealed no microscopic hematuria and was otherwise normal. Tumor markers such as α-fetoprotein and β-human chorionic gonadotropin were all within normal limits. Scrotal ultrasonography (Figure 1) revealed a hypoechoic, heterogeneous, left epididymal mass extending into the testicle with a capsular rupture and deformation of its contour that measured 12 cm in diameter. The right testis was normal. Chest radiography was normal as well as abdominal ultrasound. A review of pulmonary tuberculosis was negative. The diagnosis of testicular tumor was therefore established.

Surgical exploration was performed through an inguinal incision. After clamping the spermatic cord, scrotal contents were exteriorized through the incision. A left inguinal orchiectomy was proposed and implemented with the consent of the patient. The postoperative course was uneventful. Macroscopically, the lesion was whitish in section and centered by necrosis involving the entire epididymis with massive invasion of the testicular parenchyma. Pathology showed granulomatous inflammation with caseous necrosis involving both the epididyme and testis. Human immunodeficiency virus (HIV) serology was negative. A computed tomography urogram revealed no abnormalities.

Figure 1. *Ultrasonic scan of a scrotal tumor.*



Postoperatively, the patient took antituberculosis drugs (streptomycin, isoniazid, rifampin, and pyrazinamide). Urinalysis was normal, and scrotal ultrasonography showed a normal right epididymis and testis at 6- and 12-month follow-up.

Discussion

The spread of tuberculosis to the epididymis occurs hematogenously or through a retrocanalicular hematogenous pathway from an infected prostate. However, isolated tuberculous epididymitis probably is a result of blood-borne infection without urinary tract involvement, as in our case.

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Isolated tuberculous epididymitis most commonly develops in sexually active young men[1] and is reported as the clinical onset of HIV infection or caused by intravesical bacille Calmette-Guérin therapy for superficial bladder tumors, presumably owing to retrocanalicular descent of organisms from the prostatic urethra. The prostate, as a primary hematogenous gland, is always involved, but asymptomatic. Tuberculosis of the prostate can extend along the vas or through the perivasal lymphatics and affect the epididymis. Therefore, the first clue to the presence of tuberculous infection of the prostate and seminal vesicles is the onset of tuberculous epididymitis with a painless palpable scrotal mass.[2]

In the early phases, tuberculous epididymitis is not discernible from bacterial epididymo-orchitis. The scrotal contents are enlarged and tender, with loss of definition between the epididymis and testis. Painful or painless scrotal swelling is a common feature at presentation in patients with tuberculous epididymitis. The involvement is usually unilateral. In rare cases, acute or chronic nonspecific epididymitis can be confused with tuberculosis because the onset of tuberculosis is occasionally quite painful. The presence of sterile pyuria is a useful sign of tuberculous epididymitis. If the epididymal infection is extensive and an abscess forms, it can rupture through the scrotal skin, thus establishing a permanent sinus. Alternatively, it can extend into the testis.[3]

Testicular involvement is less common than tuberculous epididymitis, and is usually a result of direct invasive epididymitis. Tuberculous orchitis with no epididymal involvement is a very rare presentation. It is impossible to differentiate such a swelling from a tumor, and early exploration is therefore required if a rapid response to antituberculous chemotherapy does not occur.[4]

The transmission of genital TB from man to woman is very rare. Occasional reports of pelvic tuberculosis in the sexual partner of patients with tuberculous epididymo-orchitis suggest the possibility of woman-to-man venereal transmission.[5]

Pseudotumor epididymal tuberculosis, as in our patient, is exceptional and is rarely reported in the literature. It is therefore difficult to distinguish between this form and a true testicular tumor. Thus, chronic evolution and previous pulmonary tuberculosis may guide the diagnosis.

Although scrotal ultrasonography is helpful in the assessment of scrotal tumors, the appearance of epididymal tuberculosis on ultrasonography is not distinct from that of bacterial epididymo-orchitis. The most notable ultrasound findings of tuberculous epididymitis are an enlarged epididymis, predominantly in the tail portion, and marked heterogeneity of the echo texture of the involved epididymes.[6]

It is important to be aware that high proportions (50%-75%) of men with genital TB have radiologic abnormalities in the urinary tract. The urinary tract of all such patients with primary location of tuberculous infection on the epididymis should be investigated.[7] Intravenous urography in our patient was normal.

The management of tuberculous epididymitis may pose problems if *M tuberculosis* cannot be isolated from the urine. In the acute phase, the inflammatory reaction involves the testis, so it is difficult to differentiate the lesion from acute epididymo-orchitis. If there is no sinus and *M tuberculosis* is absent from the urine, treatment with an appropriate antibiotic may be started. In the absence of any improvement, within 2 to 3 weeks antituberculous chemotherapy should be started. After an additional 3 weeks, if the lesion becomes nodular, firm, and painless, exploration of the testis is mandatory without delay. The treatment of tuberculous epididymitis consists of epididymectomy in patients with chronic forms and constitutes a diagnostic confirmation procedure.[8]

Embryo quality and pregnancy outcome in sperm retrieval and intracytoplasmic sperm injection (ICSI) seem comparable in tuberculous and nontuberculous obstructive azoospermia patients. Previous tuberculous epididymitis in patients with obstructive azoospermia does not seem to affect the outcome of sperm retrieval and ICSI. The outcome of sperm retrieval followed by ICSI is not affected.[9]

One of the most difficult challenges facing TB treatment and management today is the emergence of drug-resistant strains. Drug resistance is an unavoidable phenomenon, the scale to which resistance emerges can be managed. Drug resistance can occur because of spontaneous mutations and other random events, but the majority of drug resistance can be attributed to human behavior, primarily poor prescribing practices (incorrect dosing or combinations of drugs or both), poor drug quality, and lack of patient adherence.[10] ■

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Main Points

- The spread of tuberculosis to the epididymis occurs hematogenously or through a retrocanalicular hematogenous pathway from an infected prostate. However, isolated tuberculous epididymitis probably is a result of blood-borne infection without urinary tract involvement.
- In the early phases, tuberculous epididymitis is not discernible from bacterial epididymo-orchitis.
- The management of tuberculous epididymitis may pose problems if *M tuberculosis* cannot be isolated from the urine.
- One of the most difficult challenges facing tuberculosis treatment and management today is the emergence of drug-resistant strains.