Tuberculous Epididymitis Presenting as Huge Scrotal Tumor

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Genitourinary tract tuberculosis is a specific chronic granulomatous infection. However, epididymal tuberculosis presenting as a huge scrotal mass is uncommon. We report 1 case of epididymal tuberculosis that was noted 5 months after prostate biopsy and managed with unilateral simple epididymo-orchiectomy. Antituberculosis drugs were given as the medical treatment of tuberculosis postoperatively. Urinalysis results normalized, and scrotal ultrasonography showed a normal left epididymis and testis at 6 months of follow-up.

Extrapulmonary tuberculosis can develop in a large number of sites; the 3 common sites are the skeleton, genitourinary tract, and central nervous system. Genitourinary tuberculosis represents 2%-4% of cases of tuberculosis or approximately 15% of nonpulmonary manifestations of tuberculosis. A history of present or past tuberculosis elsewhere in the body should cause the physician to suspect tuberculosis in the genitourinary tract when signs or symptoms are present. However, epididy- mal tuberculosis presenting as a huge scrotal mass is uncommon. We report a case of bilateral epididymal tuberculosis that was managed with unilateral simple epididymo-orchiectomy.

CASE REPORT

A 78-year-old man had had pulmonary tuberculosis and had undergone antituberculous chemotherapy 40 years previously. He had undergone a prostate biopsy at our outpatient clinic because of an elevated serum prostate-specific antigen (PSA) level (14.06 ng/mL) and low free PSA ratio (19%). Transrectal ultrasonography of the prostate showed an enlarged prostate with calcification. The prostate biopsy revealed prostatic nodular hyperplasia with foci of chronic inflammation. Five months after his biopsy, however, the patient started to notice a painless scrotal swelling, together with painless enlargement of the right inguinal lymph nodes. The symptoms had lasted for 1 month when he sought help at our clinic. The urinalysis showed severe hematuria, and urine culture yielded no bacterial growth. Scrotal ultrasonography revealed an 8-cm-in-diameter heterogenous cystic mass of the right epididymis (Fig. 1). Transrectal ultrasonography of the prostate showed hypoechoic lesions at the right lobe of the prostate. A kidney-ureter-bladder scout film and renal ultrasonography were obtained to rule out an infectious source of upper urinary tract. Tumor markers such as α-fetoprotein and β-human chorionic gonadotropin were all within normal limits, except for the serum PSA level (20.0 ng/mL). Morning acid-fast stain and tuberculosis culture from the patient’s sputum and urine for consecutive 3 days were performed and did not yield any positive results for tuberculosis. The enlarged scrotum did not respond to the 4-week antibiotics (cephalosporin 250 mg 4 times/d), and hematuria was intractably persistent. Bilateral epididymal tuberculosis was considered, and a right epididymo-orchiectomy using a scrotal approach, and simultaneous prostate biopsy was performed.

Grossly, the specimen disclosed a cystic lesion with multiple cheesy tissue debris around the right atrophic testis (Fig. 2). Microscopically, it showed granulomatous inflammation with caseous necrosis involving the epididymes, testis, and prostate strips. Acid-fast stain demonstrated acid-fast positive bacilli (Fig. 3). Therefore, prostatic and right epididymal tuberculosis was confirmed. Right thoracocentesis with pleural biopsy was done and showed no active tuberculosis infection. Postoperatively, the patient took antituberculosis drugs (isonia- zid, rifampin, and ethambutol) for genitourinary tuberculosis. Urinalysis was normal, and scrotal ultrasonography showed a normal left epididymis at 6 months of follow-up.

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COMMENT

Tubercle bacilli can invade ≥1 of the organs of the genitourinary tract and cause a chronic granulomatous infection. However, active tuberculosis elsewhere in the body is found in less than one half of patients with genitourinary tuberculosis. The spread of tuberculosis to the epididymis is considered to take place hematogenously or through a retrocanalicular hematogenous pathway from an infected prostate. Because epididymal tuberculosis is more common than prostatic tuberculosis, the former mechanism is likely the more common one.

Isolated tuberculous epididymitis most commonly develops in sexually active young men and is reported as the clinical onset of human immunodeficiency virus 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, before tuberculous epididymitis is suspected. Tuberculosis of the prostate can extend along the vas or through the perivascular 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.

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 nontuberculous 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.

The presence of epididymal involvement strongly suggests an infective cause instead of a malignant change. 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 epididymis. In our patient, tuberculous involvement of the ipsilateral testis was also observed; thus, concomitant orchiectomy was performed. In such an advanced case, the fertility issue could be ignored. If it occurs in a young man desiring to retain his fertility, epididymal biopsy could be considered, and testis/epididymis sparing should be performed after antituberculous medication has been given for >3 months. Fine needle aspiration of the epididymis can be useful to distinguish epididymal tuberculosis from bacterial epididymo-orchitis; however, because of the risk of tumor spillage, fine needle aspiration should be avoided if a neoplasm is suspected.
The pathologic findings of the initial prostate biopsy in our patient showed benign prostatic tissue with foci of chronic inflammation in the section. Chronic inflammation of the prostate can be responsible for an initial elevated serum PSA level. Subsequently, epididymal tuberculosis might have intervened by a direct biopsy route.

The treatment of tuberculous epididymitis consists of epididymectomy in patients with chronic forms and constitutes a diagnostic confirmation procedure. The typical presentation of acute tuberculous epididymitis usually prompts antibiotic therapy for presumed acute bacterial epididymo-orchitis. In our case, a 4-week course of antibiotics was given at his initial visit to our clinic, where the scrotal ultrasound findings suggested tuberculous epididymitis. Chemotherapy can be instituted in the case of a strong clinical suspicion of tuberculosis. Because no improvement in the scrotal mass was observed in our patient after 4 weeks of antibiotics, epididymectomy was indicated to treat such an intractable infection.

This is the first case report concerning tuberculous epididymitis presenting as a huge scrotal tumor after prostate biopsy in an older patient with a pulmonary tuberculosis history. Antituberculous therapy was initiated to eradicate residual tuberculous infection of the remaining left epididymis, seminal vesicles, and prostate.

**CONCLUSIONS**

Tuberculous epididymitis must be treated with medication as a generalized disease. Surgical excision of an infected organ, when indicated, is an adjunct to overall therapy.

**References**