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CASE REPORT

Isolated Epididymal Tuberculosis: A Challenging Diagnosis

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ABSTRACT

There is an increasing number of cases of isolated genital tuberculosis. However, it remains challenging to diagnose this condition. The clinical manifestation is often nonspecific. There are no specific and sensitive noninvasive investigations to help confirm its diagnosis.

We report the case of a young patient who presented at the Urology Clinic with chronic left scrotal swelling. We initially considered the diagnosis of either epididymal-testicular tuberculosis or left testicular tumor. An epididymal biopsy was taken. The histology report of the biopsy confirmed the diagnosis of epididymal tuberculosis.

KEYWORDS: Extrapulmonary Tuberculosis, Isolated Genital Tuberculosis, Epididymal Biopsy, Testicular Tumor.

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INTRODUCTION

Urogenital localization ranks fourth in frequency after lymph node, pleural, and osteoarticular involvement. According to studies, it represents between 1.3% and 16.9% of extrapulmonary forms (excluding disseminated or miliary tuberculosis) and between 1.2% and 3.6% of all tuberculosis cases. The diagnosis and management of pulmonary tuberculosis, the classic form of tuberculosis infection, is well codified. However, this is not the case for genital tuberculosis [1]. Practitioners need to consider the diagnosis of isolated genital tuberculosis, as any delay in its diagnosis and treatment can lead to infertility and the spread of tuberculosis disease and can be life-threatening [2].

CASE PRESENTATION

Mr SJ is 16 years old with no history of personal or family tuberculosis, unprotected sex, or scrotal trauma. He presented with a six-month history of scrotal swelling associated with night sweats and weight loss and no signs of lower urinary tract. Physical examination found a patient in good general condition with no hepatosplenomegaly nor palpable flank mass. Scrotal skin was rugated. Both testes were unremarkable, except for a hard nontender left epididymis. Digital rectal examination was unremarkable. No palpable superficial lymph nodes were observed. The patient had a Doppler ultrasound of the scrotum, which showed a left testicle measuring 17 mL with regular contours but had multiple hypoechoic and avascular nodular zones with dilatation of the left rete testis, dilated and hyperechoic zones within the head and body of the epididymis associated with the presence of impure corporeal fluid collection measuring 29 × 14 mm (figures 1 and 2). Abdominal ultrasound did not show the presence of hepatosplenomegaly or deep lymphadenopathy, but the CT urogram was normal.

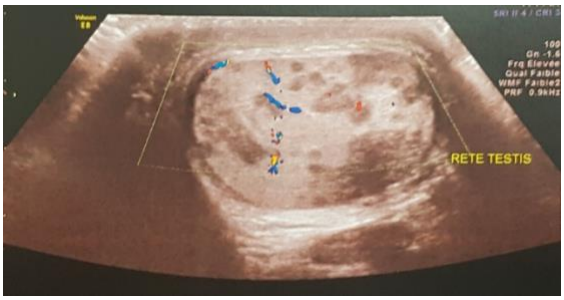

Figure 1 : Left testicle measuring 17ml with regular contours but had multiple hypoechoic and avascular nodular zones with dilatation of the left rete testis.

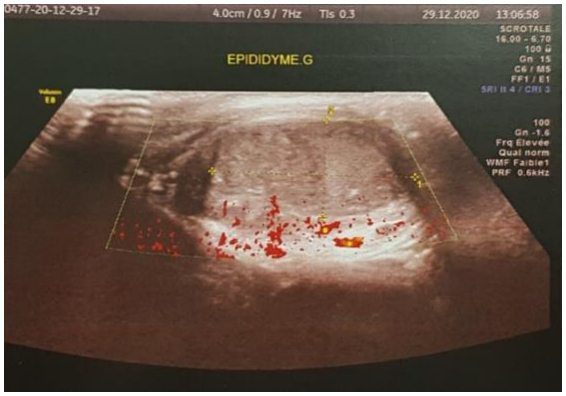

Figure 2 : Dilated and hyperechoic zones within the head and body of the epididymis.

The tuberculin skin test was negative. Urinalysis showed aseptic leukocyturia. The urine PCR test for tuberculosis on three successive days was negative, the urine culture in Ziehl-Neelsen's medium was negative, and the IFG test was negative. The search for biological markers (alpha-fetoprotein, total HCG, and lactate dehydrogenase) was negative, and HIV serology was negative. The diagnosis was made only after performing a surgical epididymal biopsy, which demonstrated epitheloid and gigantocellular granulomatous epididymitis, with the presence of caseous necrosis compatible with tuberculosis. Pus culture came back positive. Our patient underwent an imaging assessment, which did not reveal any other secondary location of tuberculosis. The patient was put on antituberculosis treatment.

DISCUSSION

Genital tuberculosis can occur at any age, but it primarily affects men between the ages of 30 and 50 years of age [3]. The first organ most commonly affected is the epididymis, followed by the seminal vesicle, the prostate, the testis, and the vas deferens [3]. A recent study indicated that isolated epididymal tuberculosis may be the first or only manifestation of early genitourinary tuberculosis [3].

The epididymal-testicular disease can occur either through the reflux of infected urine into the genital tract or through direct blood or lymphatic transmission [4]. The latter explains the increasing occurrences of isolated genital tuberculosis, which is similar to that of our patient. Sexual transmission has also been reported in the literature [5].

The weakening of the immune system increases susceptibility to tuberculosis. Presently, HIV stands as the primary driver behind tuberculosis development. Besides reactivating dormant infections, HIV-induced immunosuppression can hasten the advancement of new infections or reinfections. Between 20 and 50% of HIV-positive individuals globally experience active tuberculosis [6].

Testicular involvement can manifest as testicular cancer, resulting in unnecessary orchiectomy when unrecognized [2]. Testicular involvement is a severe form of genital tuberculosis [4]. Clinically, epididymotesticular tuberculosis may manifest as scrotal ulcer, scrotal swelling, single, bipolar, or multiple epididymal nodules, testicular induration, and disappearance of the epididymotesticular groove [7]. This atypical clinical presentation is responsible for a significant delay in diagnosis with the risk of several complications (hypogonadism, infertility, or sexual transmission) [2]. Lee et al. conducted a study on 29 patients with testicular tuberculosis, demonstrating that only 17.2% were initially considered to have tuberculosis [5]. Our patient presented with nontender epididymal-testicular induration with weight loss and night sweats.

Ultrasound remains the best exam to explore the scrotum, testis, epididymis, and vas deferens [4]. In most cases, epididymal tuberculosis can appear as hypoechoic lesions, sometimes hyperechoic, or mixed lesions. Sometimes, we can find an enlargement of the whole epididymis or collections that correspond to tuberculosis abscesses similar to what our patient had on ultrasound. The testes can also be heterogeneous and enlarged. In some cases, testicular tuberculosis can appear as patches of hyperechoic lesions, resembling miliary testicular tuberculosis, as was observed in our patient.

Diagnosis of isolated genital involvement is still challenging today and relies on clinical, biological, radiological, and bacteriological evidence. All available laboratory tests are either nonspecific or have not yet been evaluated. Intradermal injection of tuberculin (purified protein) has an estimated sensitivity of 60% to 88% in urogenital tuberculosis [8]. New immunological tests, such as QuantiFERON-TB Gold, have an estimated sensitivity between 81% and 89% and specificity between 96% and 100% for both pulmonary and extra-pulmonary tuberculosis [9]. There is no specific assessment for genital tuberculosis. For our patient, the gamma interferon test was negative.

Investigations conducted on genital secretions have been poorly evaluated in isolated cases such as our case [1]. Sperm culture is rarely performed and little evaluated; therefore, it is not recommended in current practice [1]. The culture of pus and peritesticular fluid is a reliable test. However, it takes a long time (up to 42 days) to get the results [2]. However, it has the advantage of being able to test for sensitivity and resistance to the four standard antituberculosis drugs [2].

Unfortunately, biopsy and orchiectomy remain the only means to make a rapid diagnosis up until now. This was the only way to obtain the diagnosis of genital tuberculosis in our case. CT and IVU keep their essential place in exploring the urinary tract [3]. CT IVU revealed no anomaly in our patient. This is suggestive of isolated genital disease of Tuberculosis. Treatment is based on antituberculosis agents [1].

CONCLUSION

There is an increasing incidence of Isolated genital tuberculosis, which is a form of urogenital tuberculosis. There is still no codified approach to diagnosing this condition due to the absence of specific and sensitive investigations. Currently, biopsy and orchiectomy remain the only means of confirming this condition. We recommend the serial semen culture, reactional hydrocele fluid culture, or intracrotal pus culture to identify *Mycobacterium tuberculosis* when possible.

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AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction and revision of the manuscript and provided approval for this final revised version.

COMPETING INTERESTS

The authors declare no competing interests in this case.

PATIENT CONSENT

Written informed consent was obtained from the patient.

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