



A rare case of isolated tuberculous epididymitis in a young man presenting with a swollen testicle

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Abstract

Introduction

Isolated tuberculous epididymitis usually presents with a clinical picture and radiographic illustrations similar to those of a scrotal neoplasm; therefore, diagnosis can be challenging for physicians. This paper reports a rare case of isolated tuberculous epididymitis in a young man with swollen testicles.

Case report

A 32-year-old man with unremarkable past medical history was hospitalized for a swollen right testicle accompanied by localised pain and fever. Scrotal ultrasound and CT displayed a 27-mm lesion of the right testicle with no renal parenchymal masses. The possibility of a malignant tumour in this case was thought to be significant, and therefore the patient underwent a right inguinal orchiectomy. Histopathological examination of the removed testis revealed caseating granulomatous inflammation and necrosis with Langhans giant cells, typical of tuberculous infection.

Conclusion

Although the possibility of a scrotal neoplasm in young men with swollen testicle is high, diagnostic work-up in these patients should be thorough to avoid unnecessary orchiectomies. Clinicians should also be aware of the case of isolated tuberculous epididymitis, an entity that can be potentially cured by anti-TB medications if diagnosed in an incipient phase.

Introduction

While genitourinary tuberculosis (GUTB) accounts for up to 30% of extrapulmonary TB, epididymal involvement accounts for only about 20% of GUTB^{1,2}. Only a paucity of cases regarding epididymo-orchitis and scrotal involvement without renal or pulmonary involvement has been reported until today³⁻⁵. Clinical manifestations of this rare situation are variable and may include fever, increased frequency of urination, frank pain, dysuria with sterile pyuria or blood in the urine, suprapubic pain or a painless testicular mass^{3,6}. Isolated tuberculous epididymitis (ITE) can be potentially cured by anti-TB medications if diagnosed correctly, and surgical resection is usually reserved for those patients who do not respond to medical treatment⁷. However, ITE may present with a clinical picture similar to that of a scrotal neoplasm and diagnosis may be challenging for physicians. We report a case of a patient with ITE diagnosed after undergoing a high inguinal orchiectomy for a suspected testicular tumour.

Case report

A 32-year-old man non-smoker presented in Emergency Department complaining of right testicle swelling

accompanied by localised pain and low-grade fever over a period of 25 days; his symptoms became more profound during the last seven days. His past medical history was unremarkable (he did not mention any trauma to the testes) and clinical examination of chest and the abdomen were normal. Physical examination of the genitalia revealed an enlarged right testicle while epididymis and spermatic cord were normal to palpation. The left testis and cord were normal and lymph nodes were not palpable. Prostate was also found normal during rectal examination.

Complete blood count, biochemistry tests and tests for serum tumour markers including prostate specific antigen, alpha-fetoprotein and beta-human chorionic gonadotropin were all within normal levels. Urine analysis was normal without pyuria. Five urine samples were sent to the laboratory for culture studies, but none of them detected *M.tuberculosis* or *M.bovis*. The patient was not immunocompromised, and he did not have the human immunodeficiency virus. Chest X-ray was clear. Tuberculin test was found positive with the central indurate zone measuring 13 mm. Scrotal ultrasound displayed the enlargement of the right testicle and a hypoechoic lesion in the right testicular parenchyma, involving the epididymis and a hydrocele; these findings were consistent with the diagnosis of a testicular neoplasm. Computer tomography (CT) scan displayed a 27-mm lesion of the right testicle and a hydrocele. No renal parenchymal masses were detected with the CT scan.

The possibility of a malignant tumour was thought to be significant

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FOR CITATION PURPOSES: Papadopoulos A, Bartziokas K, Morphopoulos G, Anastasiadis A, Makris D. A rare case of isolated tuberculous epididymitis in a young man presenting with a swollen testicle. OA Case Reports 2013 Jan 31;2(1):3.

and therefore, the patient underwent a right inguinal orchiectomy. Intraoperative findings included an enlarged testicle and a hydrocele but no other significant findings were detectable in the rest of the testis or the spermatic cord. Bacteriological analysis of the testicle tissue showed the presence of tubercle bacillus. Findings of the histopathological examination of the testis were consistent with TB infection: granulomatous reaction and Langhan's giant cells (Figure 1). The patient received anti-TB treatment with isoniazid (INH), rifampicin (RMP), ethambutol (EMB) and pyrazinamide (PZA) for two months, which was reduced to INH and RMP for the next four months; six months later no sign of the disease was clinically or radiographically noticed.

Discussion

ITE is an entity, which usually presents without specific clinical symptoms in young men under the age of 40 and can be mistakenly diagnosed as a testicular tumour⁸. More specific symptoms like tense swollen testicles/epididymes with acute localised or groin pain, dysuria, fever and marked tenderness of the

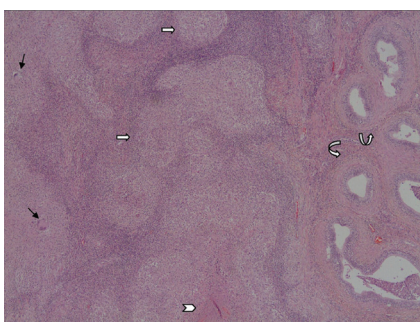


Figure 1: Histopathological examination. Involvement of the epididymis by caseating granulomatous inflammation (white arrows) and necrosis (white head), with Langhans giant cells (black arrows), typical of tuberculous infection (hematoxylin and eosin, x40) (diagonal white arrows indicate normal epididymis).

area can be noticed in other inflammations or malignancies. Especially for tuberculous epididymitis where urine cultures can be negative for bacilli in half of the specimens⁹ and there are no clinical symptoms from other organs or systems, diagnosis is even more difficult. Moreover, radiographic illustrations cannot differentially diagnose ITE from malignant diseases and therefore, a therapeutic approach based on minimally interventional techniques has to be developed. Our case highlights these clinical challenges and the necessity of a thorough diagnostic work-up to avoid an unnecessary orchiectomy.

Diagnostic imaging findings are only consistent with tuberculous epididymitis but not diagnostic⁸. However, scrotal ultrasound, CT scan and a magnetic resonance imaging of the area are necessary to reveal the extent of GU system involvement (primarily to exclude kidneys' involvement). ITE imaging may mimic testicular tumour since scrotal abscess, heterogenous lesions and extratesticular calcifications can be seen in both entities^{10,11}. In our case, the absence of specific clinical or radiologic findings led to diagnostic orchiectomy that revealed TB. Following this, our case emphasizes not only that ITE may have a non-specific manifestation but also the lack of sensitive diagnostic tests that could help in development of diagnostic algorithms avoiding therefore unnecessary orchiectomies. Until now, fine needle aspiration cytology

or the surgical removal of the affected area was the cornerstone for the diagnosis of ITE^{7,9}.

According to European Urology Guidelines, treatment of uncomplicated GUTB consists of the combination of either three anti-TB drugs (INH, RMP, EMB or streptomycin) given daily for a period of three months followed by two drugs (INH and RMP) for the next three months, or an initial four-drugs period (INH, RMP, EMB and PZA) followed by INH and RMP for two more months⁹ (Table 1). In specific cases of GUTB like immunosuppressed/human immunodeficiency virus patients or in cases of TB recurrences, the treatment should be given for a period of 9–12 months⁹. Other authors suggest the injection of intratunical RMP as an alternative therapy of ITE TB⁵. Surgical treatment should be reserved for those cases which do not respond to anti-TB treatment or when complications like intrascrotal abscess or severe upper urinary infection are presented^{9,12}.

All patients—especially young men—with a suspected epididymo-testicular lesion where differential diagnosis between a scrotal tumour and GUTB is particularly difficult should be further investigated with a fine-needle aspiration biopsy.

Conclusion

This case illustrates that extrapulmonary appearance of TB often seen in middle-aged men may mimic testicular neoplasm. Physicians should be aware of this type

Table 1 Two therapeutic algorithms for the treatment of uncomplicated genitourinary tuberculosis according to EAU guidelines⁹

	Incipient treatment	Continuation treatment
First choice	Three months	Three months
	INH, RMP, EMB (or SM)	INH and RMP
Second choice	Two months	Four months
	INH, RMP, PZA, EMB	INH and RMP
INH, isoniazid; RMP, rifampicin; EMB, ethambutol; SM, streptomycin; PZA, pyrazinamide		

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of extrapulmonary TB presentation. In this respect, diagnostic work-up in young men with swollen testicle should be thorough in order to avoid an unnecessary orchectomy. A diagnostic algorithm, which should include minimally invasive diagnostic approaches such as needle biopsy might be effective for accurate diagnosis.

Abbreviations list

CT, computer tomography; EMB, ethambutol; GUTB, genitourinary tuberculosis; INH, isoniazid; ITE, isolated tuberculous epididymitis; PZA, pyrazinamide; RMP, rifampicin; SM, streptomycin; TB, tuberculosis.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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