CASE REPORT

Testicular Tuberculosis: A Rarely Thought of Diagnosis

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ABSTRACT

Mycobacterium tuberculosis primarily affects the lungs but it can also affect other organs in which it is known as Extrapulmonary tuberculosis (EPTB). The prevalence of genitourinary TB globally and including Tuberculosis (TB) in endemic areas is under reported. Like all forms of EPTB, testicular TB has no pathognomic feature. In the abscence of microbiological diagnosis, a constellation of clinical presentation, with investigation such as ultrasonography, histology and response to anti tuberculous drugs alongside a high index of suspicion is obliging in making the diagnosis. The diagnosis of testicular TB is often missed or delayed. We present an advanced case of testicular TB with good response to anti tuberculous drugs.

INTRODUCTION

Mycobacterium tuberculosis (TB) has been a global and public health problem since time immemorial.[1] TB incidence rates are highly pronounced in resource limited settings. The main drivers of TB are HIV and poor social economic status. It is the leading cause of death from a single infectious agent globally. In 2016, an estimated 10.4 million people fell ill from TB, 10% of who were HIV-infected with Africa contributing 25% to the TB burden. In the same year an estimated 1.3million HIV negative and an additional 374,000 HIV-infected people died from TB.[2] In a national survey to estimate the prevalence of bacteriologically confirmed TB in Zambia between 2013-2014, Kapata*et.al* observed a TB prevalence of 455/100000 people which is higher than those from other countries.[3] The burden of EPTB in which Testicular TB falls has been difficult to evaluate in most resource limited countries because of lack of sensitive techniques to detect EPTB, due to the paucibacillary nature of most of EPTB.[4] Most cases of EPTB are made on clinical grounds. Diagnosis of testicular TB on clinical grounds is even much more difficult because testicular TB is not a common occurrence.[5]Most times the diagnosis of testicular TB is missed because the presentation mimics malignancy as there is no pathognomic feature.[5]

There have been a number of case reports of testicular TB but clinical presentation has been variable. Cho *et al* reported case of a 25year soccer player who presented with persistent pubic pain and a right testicular mass which was thought to have been a testicular malignancy.[6]Orchiectomy was done and histopathology reviewed granulomatous inflammation. HIV serology was not reported.In this patient the AAFB stain was negative and CXR was normal.Alzayyani*et.al*reported a case of a 34-year-old patient who presented with fevers, night sweats, poor appetite and a painful right scrotal swelling. The patient had a normal haemogram but the ESR was raised (45mm/hour) and HIV serology was

negative. The Mantoux test was positive. Ultra-Sound of the scrotum showed multiple hypoechoic lesions in the epididymis and the testes. This patient was given 6month course of Anti-Tuberculous drugs with remarkable response.[7] We present an advanced case of microbiologically confirmed testicular TB with HIV co-infection.

CASE

Male/ 42 years of old who presented to a hospital, in Lusaka, Zambia with a history of non-productive cough for one month associated fevers on and off. He also gave a history of a right testicular swelling for a month associated with pain on and off. He denied history of abdominal pains, dysuria or urethral discharge. He gave no history of diarrhoea or vomiting.

The patient was HIV infected and had been on Tenofavir/Lamivudine/Efavirenz since 2008.The latest CD4 count and viral load were108cells/ul and 480457cp/ml respectively. The patient indicated that he had been compliant with his anti-retroviral therapy. He had no past medical history of Tuberculosis, Diabetes Mellitus or Hypertension and denied history of TB contact.

The initial evaluation revealed a young man of good nutritional status who was not in acute distress. The vitals were as follows: BP 143/88 mmHg, Pulse 112b/min and Temperature was 39.5°C.The Chest and cardiovascular examination w non-revealing. The abdomen was non-tender with no organomegaly,. He however had a swollen right testicle which was tender.

At this time the attending Clinical officer made an impression of Respiratory Tract Infection with Orchitis.

INVESTIGATIONS:

ALT: 33.9U/L AST: 14.9U/L, Creatinine: 79 umol/L

Hb: 12.5g/l WBC 3.6 X10^9 Lymphocytes: 44.6% , Monocytes: 15.6% ↑, PLT: 196, MCV: 91

ESR: 95mm/hr

Urinalysis: Normal finding

RPR: Non-Reactive

CXR: Report Normal, U/S Scrotum: Right scrotum with heterogeneous fluid content, Left scrotum reported as normal

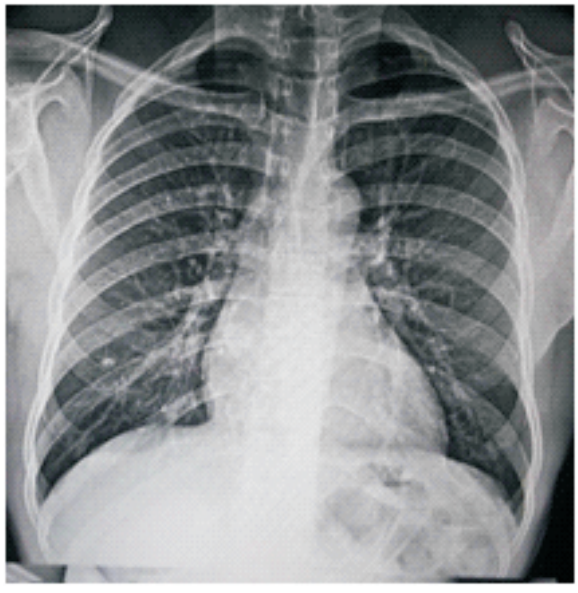

Figure 1:ULtrasound of scrotum with heterogeneous fluid content Figure 2:CXR reported normal

The patient was give a 5 day course of Cephalexin and booked for review by a urologist.

On 04/09/17, the patient was reviewed by a urologist. The cough had slightly improved but there

was no improvement in the swelling of the testicle. The physical examination findings were normal apart from the testicular swelling. The Urologist booked patient for surgery (exploration of the scrotum for an epididymal mass) on 14.09.17.Patient underwent orchiectomy and the specimen was sent for histology.

Patient was discharged on Ciprofloxacin and Metronidazole and discharged after 4 days of hospital stay to come for review once histology results ready which usually takes 2 weeks in our setup because of high volumes of specimens and limited number of pathologists.

Patient returned to hospital a week earlier than the scheduled booking which was one month, because he noticed the wound at the sight of operation was not healing and it was producing a pus-like discharge. The discharge was continuous causing him a lot of discomfort and embarrassment because the trouser was getting soiled most of the time. The patient who stays out of town managed to obtain histology results from the pathologist during this review.

RESULTS

Histology result: Caseating granulomatous inflammation most likely due to Mycobacterium tuberculosis. Below are the histological images of the testicular specimen from the patient.

Figure 3: 2x magnification showing effacement of testicular parenchyma with caseation (arrow)

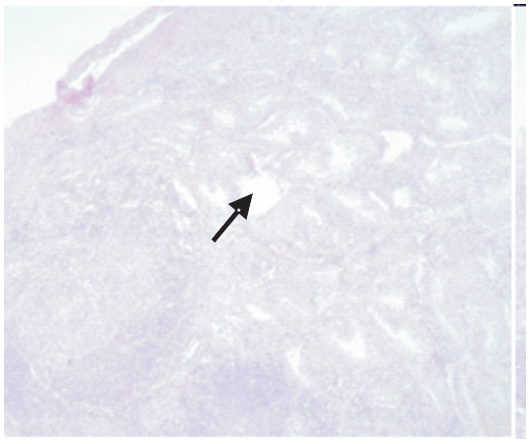

Figure 4: 10x Caseating Granulomatous inflammation (thin arrow) with residual testicular tissue (bold arrow)

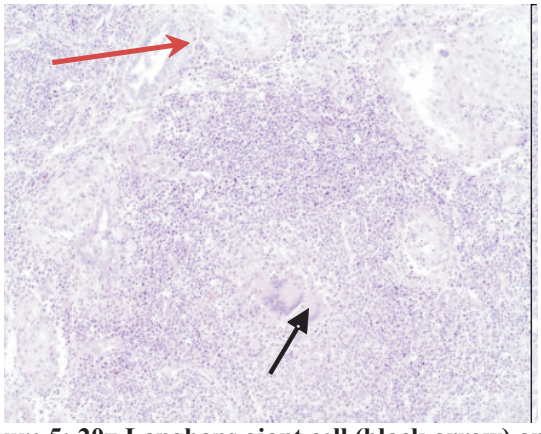

Figure 5: 20x Langhans giant cell (black arrow) and seminiferous tubule (red arrow)

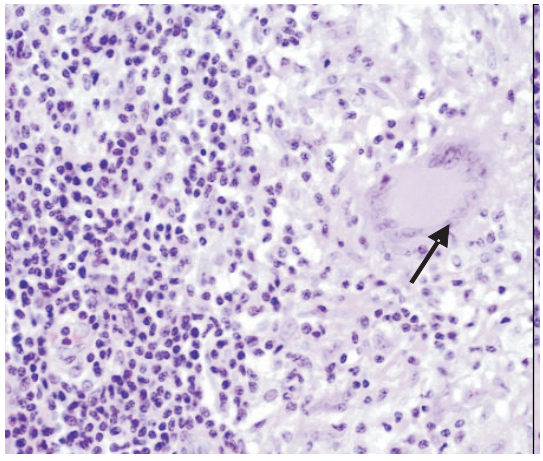

Figure 6: 40x Lymphocytes and Langhan's giant cell (black arrow)

The ZiehlNeelsen stain was Negative for Alcohol Acid Fast Bacilli (AAFB)

The patient was started on anti-tuberculosis drugs based on the results and at the same time, a swab was take for repeat microscopy. The specimen was stained with Auramine and it revealed AAFB 2+

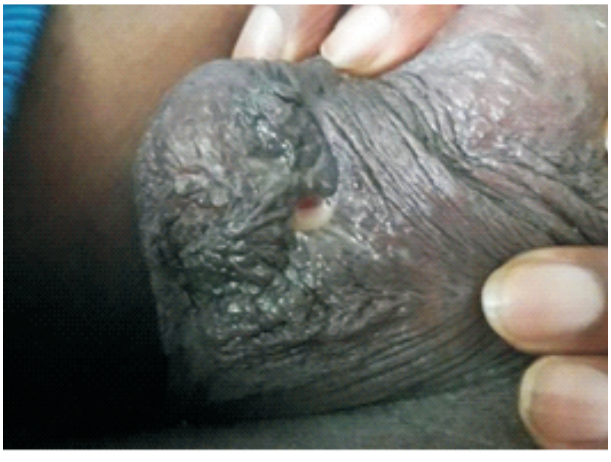

Figure 7:Images of a Discharging Scrotal sinus due to Mtb at time of presentation

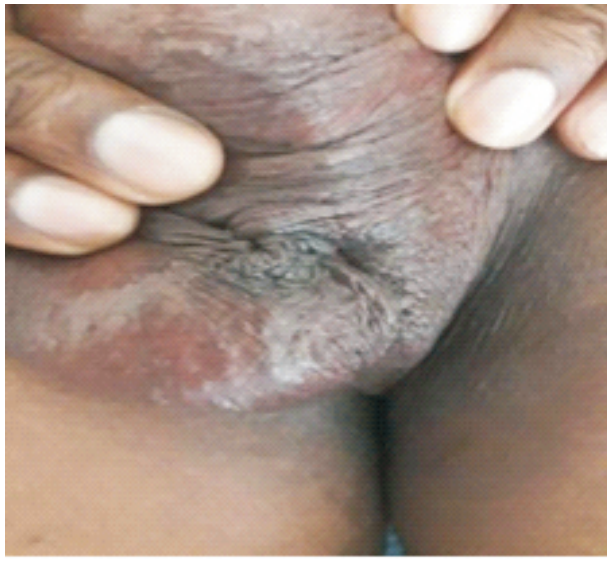

Figure 8: Image after 2 weeks on Anti-Tberculous drugs showing significant reduction in discharge and size of sinus.

Figure 9: Sinus completely healed after four months on Anti-Tuberculous drugs

DISCUSSION

The diagnosis of testicular TB if often delayed. This is because the index of suspicion is very low. In this case, the earlier working diagnosis was orchitis of which broad spectrum antibiotics were given with no response. Genitourinary TB lacks pathognomonic clinical presentation.[5]The presentation of this case mimicked that of a testicular malignancy, the presence of an epididymal mass obscured the thought towards a malignant process. As a result diagnostic dilemma did arise. Before surgery, diagnostic tools like ultrasound, CT scan and fine needle biopsy/aspiration would have guided the diagnosis. This would have possibly helped avoid an orchidectomy.[6]

A study by Chung *et.al* looking at sonographic findings in 22 patients with tuberculous epididymis or epididymis-orchitis observed that a finding of heterogeneous hypoechoic pattern in the epididymis and the testes favours the diagnosis of TB.[11] Our patient had Ultrasound findings consistent with findings in this study.

The risk factor for the dissemination of TB to the testicles in this patient was the HIV infection. Despite having been on HAART for at least 10 years, he had severe immune suppression. The viral load clearly indicates treatment failure. The dissemination of TB to the testicles can be explained by the fact that HIV dampens the cell mediated immune response. On the other hand, TB accelerates the progression of HIV disease. This may be the case in this patient.[8]The patient described above had a discharging sinus, the presence of the sinus is indicative of an advanced disease.[5,9] The severe immunosuppression from the HIV could be the contributing factor.

The definitive diagnosis for testicular TB is by microbiological confirmation. In this case, TB was diagnosed using auramine stain. Other means such as PCR can be used and this speeds up the diagnosis and initiation of treatment. Diagnosis and initiation of appropriate treatment, in this case, was delayed by at least a month. This is attributable to low index of suspicion and scarcity of suitable diagnostic tools. Culture is one of the methods available for diagnosis, however, it takes 6-8 weeks to generate the results. The yield from histology is good, this can be used as the last resort as procedure like orchidectomy may compromise fertility. Histology is highly indicated where suspicion of malignancy is high. Like any other form of TB, constellation of symptoms, signs, radiological and microbiological features is required to make the diagnosis of testicular TB. In the absence of microbiological confirmation, clinical response to Anti-Tuberculous drugs can be a surrogate marker of TB.[10]

LEARNING POINTS

1. Testicular tuberculosis is often missed and is commonly mistaken for malignancy of the testes.
2. Patients with chronic scrotal swelling should be evaluated for TB, especially in high TB burden settings and in people with HIV.
3. There are no pathognomonic features that define testicular TB. Therefore, the diagnosis of testicular TB requires a high index of suspicion and constellation of clinical features with investigation (radiological and microbiological test) and response to anti-tuberculous drugs.

Declarations of interest

None

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