CASE REPORT

Isolated tuberculosis of tunica albuginea and tunica vaginalis presenting as acute hydrocoele: a diagnostic dilemma

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SUMMARY

We report the first case of genital tuberculosis (TB) occurring in tunica albuginea (TA) and tunica vaginalis (TV) presenting as acute hydrocoele. A 35-year-old man presented with acute onset left scrotal swelling. Physical examination revealed left hemiscrotal swelling with overlying skin erythema and tenderness. Surgical exploration was carried out due to increasing pain and per operatively found thickened TA and TV with a single small nodule on TA. Histopathology revealed typical granuloma formation, however, no *Mycobacterium* was seen. Subsequent Ziehl-Neelsen stain on separate tissue specimen confirmed the presence of acid-fast bacilli. Based on these findings, antituberculous treatment was started involving daily isoniazid (INH), rifampicin, ethambutol and pyrazinamide for 2 months and further INH and rifampicin for further 4 months.

BACKGROUND

Tuberculosis (TB) remains the leading cause of morbidity and mortality among infectious diseases worldwide.^{1 2} The lungs are the usual site of involvement, however, extrapulmonary disease is increasing.³ Genitourinary TB (GUTB) is the second most common extrapulmonary site, contributing 30% of cases.^{4 5} GUTB usually affects the kidneys, urinary bladder, prostate, epididymis, testes and fallopian tubes.⁶ A diagnosis of GUTB is usually challenging owing to the nature of its chronic symptoms and non-specific findings.^{1 4} A high index of suspicion is required, especially in endemic areas.¹ Isolated TB of tunica albuginea (TA) and tunica vaginalis (TV) without renal or prostate involvement is extremely rare. One case report of such involvement presenting as scrotal nodule has been published to date.⁷ The author presents the first case of acute hydrocoele caused by TB involving TA and TV only.

CASE PRESENTATION

A 35-year-old man presented with a 7-day history of a rapidly enlarging left hemiscrotum. No inciting event could be related to onset. There was associated pain but no fever, weight loss or similar prior episodes. The patient was sexually active with a single partner, and denied prior history of any sexually transmitted disease or associated urinary symptoms. On examination, a tense, soft lump was found in the left hemiscrotum, with positive trans-illumination test. The left testis and epididymis could not be palpated separately. An initial

impression of acute hydrocoele was made, though the underlying cause was yet to be determined. Furthermore on digital rectal examination, the prostate was small and non-nodular.

INVESTIGATIONS

Urine culture did not grow any organism and ultrasound scrotum showed left hydrocoele. The patient was kept under observation for a subsequent 72 h with no improvement in symptoms. Further work up with contrast-enhanced CT of the abdomen and pelvis, including the scrotum, was performed to look for intra-abdominal pathology as a cause of hydrocoele, however, no abnormality was detected (figure 1).

DIFFERENTIAL DIAGNOSIS

- ▶ Acute hydrocoele secondary to trauma
- ▶ Acute epididymo-orchitis

TREATMENT

Initially, a trial of antibiotics (oral ciprofloxacin 500 mg twice a day) was given based on the acute nature of the illness and erythema of scrotal skin. No improvement was observed after 72 h of antibiotics, rather, the patient's pain was increasing. Therefore, a decision of left scrotal exploration was made. A transverse left scrotum incision over the most prominent part of the swelling was made and 250 cc of clear fluid drained. TA and TV were thickened with a small white nodule on TA, otherwise, the testis and epididymis looked normal. Hydrocoelelectomy was performed and the excised sac wall along with TA nodule was sent for histopathology (HP). Antituberculous treatment was promptly started after establishing proper diagnosis of GUTB, which involved daily isoniazid (INH);

Figure 1 CT of the abdomen and pelvis with contrast: (A) normal kidneys and (B) left hydrocoele.

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300 mg/day), rifampicin (600 mg/day), ethambutol (15 mg/kg/day) and pyrazinamide (25 mg/kg/day) for 2 months followed by 4 months of INH and rifampicin only.

OUTCOME AND FOLLOW-UP

Postoperatively, the patient remained stable and was discharged the next day. On his first clinical visit a week after surgery, he did not have any symptoms. HP of tissue exhibited well-formed granuloma with multinucleated giant cells (figure 2). As TB is endemic in our country, the patient was started on antituberculous treatment with regular follow-up. Ziehl-Neelsen stain on a separate tissue specimen confirmed the presence of acid-fast bacilli. Chest X-ray did not reveal any evidence of pulmonary TB. The patient remained strictly compliant with his medications. He was followed up again at 4 weeks, and 2 and 4 months, for monitoring of his liver and renal function tests compared to baseline results.

DISCUSSION

TB remains a great health concern all over the world, and especially so in developing countries.^{8,9} Worldwide it is among top 10 causes of death, killing approximately 2 million people annually.² Within Pakistan, each year, 300 000 new TB cases are diagnosed, according to WHO statistics.¹⁰ GUTB is the common site of disease though in 28% of the cases involvement is purely genital.^{11,12} GUTB usually affects those aged 30–50 years, with a male/female ratio of 2:1.^{6,9} GUTB usually occurs via haematogenic spread or through the urinary system.^{6,9} It is frequently associated with tuberculous involvement of the kidneys, although isolated genital lesions may occur.^{6,9}

History of TB is present in only 36.5% of patients; therefore, diagnosis of GUTB does not require prior TB history or exposure.⁹ A high index of suspicion is required, especially in endemic and HIV prevalent areas.^{9,13} Significant morbidity may result if not diagnosed in time.⁴ Diagnosis of GUTB is often challenging but ultrasound, intravenous urogram (IVU), CT and urine culture help in making diagnosis.² Common presentations of genital TB are chronic, such as nodule, fistula and scrotal skin thickening, or patients may be entirely asymptomatic.¹ Acute presentation is unusual but may occasionally manifest in the form of scrotal abscess or epididymitis.^{1,12,14} Isolated

involvement of TA and TV is extremely rare, and the presentation of TB as acute hydrocoele has never been reported.

There is new surge of TB in developed and African countries due to AIDS.¹⁵ Daniel *et al* state that 50–70% of immunocompromised and HIV patients have extrapulmonary site involvement.⁶ A high index of suspicion is required and the disease often merits treatment empirically.

Learning points

- ▶ Tuberculosis (TB) is a great health concern, especially in developing countries. An elevated degree of clinical awareness is needed for genitourinary TB in endemic areas.
- ▶ Diagnosis is often challenging and a high index of suspicion is required to keep wide ranging complications at bay owing to missed diagnosis.
- ▶ At least three early morning urine samples for acid-fast bacilli should be sent for initial evaluation of active genitourinary TB.

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Figure 2 Histology slide showing granuloma.

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