



Isolated tuberculous epididymo-orchitis in chronic spinal cord injury

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Abstract : Neurogenic bladder following spinal cord injury is a risk factor for epididymo-orchitis caused by gram negative bacteria. Genitourinary tuberculosis is a common form of extrapulmonary tuberculosis. Isolated tuberculous epididymo-orchitis in a person with chronic spinal cord injury is a rare clinical entity. A high index of clinical suspicion, along with careful history taking and examination, is necessary for accurate diagnosis and treatment of this condition.

Keyword : spinal cord injury, epididymo-orchitis, tuberculosis

Introduction

Spinal cord injury (SCI) has been reported to have an incidence of about 40 cases per million.¹ Most individuals with SCI develop neurogenic bladder, needing alternate strategies for long term bladder management. Clean intermittent catheterization (CIC) is one of the preferred methods of bladder management in such individuals. Though long term CIC is known to cause lower incidence of urinary tract infections, it has been shown to be a risk factor for epididymo-orchitis.² We report a case of a person with chronic SCI, on CIC for many years, who developed features suggestive of epididymo-orchitis, but the workup lead to the diagnosis of an uncommon condition among persons with SCI -isolated tuberculous epididymo-orchitis.

Case report

A 45 year old male, single, corporate employee living in a metropolitan city in India had sustained a lower thoracic traumatic SCI 20 years ago. He underwent a rehabilitation program, and since then he had been managing his bladder with CIC. He recently presented with complaints of right scrotal swelling associated with intermittent fever, generalized malaise for about five months. He had been treated in different hospitals for urinary tract infection. He did not have productive cough, evening rise of temperature, past or family history of tuberculosis. His general and systemic examination was non-contributory except for T8 ASIA-A paraplegia. There was no significant lymphadenopathy. His genital examination revealed a fluctuant swelling of the right scrotum, with another distinct cystic swelling on the inferior aspect of the right scrotum that was not adherent to the testis. There was no ulceration of the overlying skin. The testis was not

adequately palpable. Though tenderness was not testable because of his neurological deficits, right scrotal examination elicited reflex lower limb muscle spasms. The left scrotum examination was normal. Among laboratory investigations, urine smear examination revealed no pus cells or bacteria. Culture and sensitivity of urine only grew insignificant contaminants. Blood borne virus screening was negative. Serum creatinine was 1.0 mg%, ESR 20mm after 60minutes, leucocytes total counts 9900/mm³, differential – neutrophils 71%, eosinophils 1%, lymphocytes 20%, monocytes 8%. Semen analysis was not done. Plain radiograph of the chest and abdomen (Kidney, ureter, bladder view) was normal study. Ultrasonography of the scrotum revealed normal testes bilaterally and a normal left epididymis. The right epididymis was mildly enlarged and heterogeneous. The scrotal sac contained significant clear fluid. A thick-walled collection with fine internal echoes was seen along the inferior aspect of the right scrotal sac. The spermatic cord appeared normal. Ultrasonography of the abdomen showed no significant lesions other than a simple renal cortical cyst in the mid-pole region of the right kidney, measuring about 10 mm. Urinary bladder showed a diffusely thickened wall. There was no significant pelvic, para-aortic or inguinal lymphadenopathy



Figure 1. Ultrasonographic image of the right scrotum depicting the testis, hydrocele and the cystic collection

Chronic unilateral scrotal swelling along with a cystic scrotal wall swelling raised a clinical suspicion of secondary hydrocele due to tuberculous etiology. He subsequently underwent surgical intervention for right scrotal sac eversion, excision of the cystic lesion and epididymal biopsy. Mycobacterium culture (Lowenstein Jenson method) of the specimen was negative. Biopsy of the epididymis revealed chronic granulomatous inflammation with caseous necrosis

consistent with the clinical suspicion of a tuberculous etiology. Post-operative period was uneventful. He was placed on Category-I antitubercular medications for 6 months as per WHO guidelines. He was placed on continuous bladder drainage through a urethral catheter peri-operatively, following which he has resumed clean intermittent catheterization. At one year follow-up, having completed his antitubercular medication course, he has had no recurrence of scrotal symptoms or urinary tract infections.

Comment

Genitourinary tuberculous is a common site of extrapulmonary tuberculosis, with the incidence ranging between 9 and 70%.^{3,4} Epididymo-orchitis has been reported to be involved in about 20% genitourinary tuberculosis. Epididymo-orchitis has traditionally been considered as a manifestation of latent tuberculous lesions in other structures of the genitourinary tract, and is the commonest site of genital tuberculosis.⁵ A case series from this institution, though, has shown that isolated tuberculous epididymo-orchitis in the absence of any other focus of tuberculous lesion is a common clinical entity.⁴ This case-report is unique in that the lesion was observed in a person with chronic SCI. Though about 40% of persons with SCI have been reported to have at least one episode of epididymo-orchitis⁶, we have not come across any other report of isolated tuberculous epididymo-orchitis in a person with SCI. Dissemination to the epididymis has been postulated to be either a descent from the kidney or through hematogenous spread.⁷ Diagnostic errors would be related to the commonly encountered bacterial epididymo-orchitis in daily practice in tertiary care SCI rehabilitation units as ours, especially in persons who manage their neurogenic bladder with CIC. A high level of clinical suspicion needs to be maintained, especially in India and other countries where tuberculosis is endemic, so that red herrings such as hydrocele, recurrent urinary tract infections could be dealt with and the correct diagnosis is made.⁸ Tuberculous epididymo-orchitis has also been reported to cause infertility.⁹ However, seminal analysis was not done in this case as spinal cord injury by itself is known to cause impaired sperm motility. Diagnosis of genitourinary tuberculosis can be confirmed by positive mycobacterial culture or characteristic histopathological features or positive acid fast bacilli from the lesion.¹⁰ In this case, though Mycobacterial culture was negative, histopathological findings were consistent with granulomatous changes with caseous necrosis. Genitourinary tuberculosis is classified as 'severe' extrapulmonary tuberculosis. Standard treatment consists of a total of 6 months of antitubercular medication - two months of four medications rifampicin, isoniazid, pyrazinamide and ethambutol, followed by four months of rifampicin and isoniazid. Wherever possible, daily dosing should be followed instead of thrice weekly doses.¹⁰ In this instance, following 6 months of daily dosing of standard treatment regime, there was clinical resolution of symptoms.

Conclusion

Isolated tuberculous epididymo-orchitis is an uncommon clinical entity among persons with SCI. Careful history and clinical examination in all cases of epididymo-orchitis is necessary to rule out this potentially treatable condition.

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