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Tuberculosis of the Scrotum: An Uncommon Manifestation of a Common Disease

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Abstract

Scrotal tuberculosis (TB) is a rare manifestation of extrapulmonary tuberculosis it includes tuberculous orchitis and epididymitis. We present a case report of a patient with scrotal tuberculosis highlighting its radiological features, clinical presentation, and management. The patient demonstrated bilateral grossly enlarged epididymis showing hypoechoic with coarse echotexture and rounded hypoechoic lesions within the bilateral testis showing increased vascularity on colour doppler examination this case report contributes to the understanding of craniofacial scrotal tuberculosis and emphasizes the importance of diagnosis and treatment.

Keywords: Scrotal tuberculosis, USG (Ultrasonography), TB (Tuberculosis), Tuberculous orchitis, Epididymitis

Introduction

Scrotal tuberculosis (TB) is a rare manifestation of extrapulmonary tuberculosis It includes tuberculous orchitis and epididymitis. Scrotal tuberculous typically begins in the tail of the epididymis and the ductus deferens. Tuberculous epididymitis appears as a diffuse heteroechoic enlarged epididymis or intrinsic nodular hypoechoic lesions showing increased colour Doppler flow differentiating it from infarction. Bilateral involvement is common, unlike other nontuberculous infections. Other associated findings are thickened scrotal skin, scrotal hydrocele, scrotal sinus tract, scrotal asbscess and intrascrotal extratesticular calcification at epididymis and tunica vaginalis Hereby we report a case of male patient with unusual presentation of scrotal tuberculosis extensively involving bilateral epididymis and testis.

Case History

A 40-year-old male presented to surgical OPD with complaints of scrotal pain and swelling on clinical examination, swelling was noted over the scrotum along with induration of the scrotal skin vitals were within normal range USG scrotum was advised to evaluate the scrotum biopsy was planned for histopathological diagnosis.

Biopsy was planned for histopathological diagnosis.

Diagnostic Evaluation with imaging

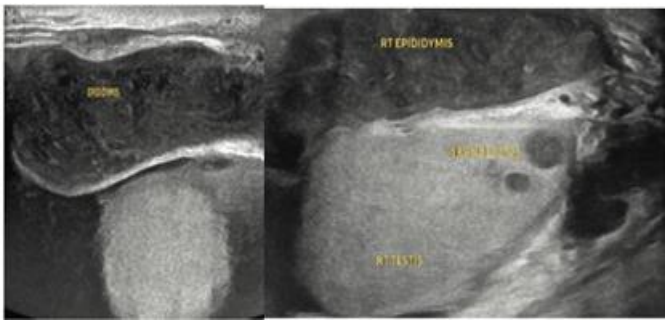

Figure 1:

Bilateral epididymis appears grossly enlarged with right epididymis measuring 4.5 x 2.5 cm and left epididymis measuring 4.3 x 2.4 cm. They are diffusely hypoechoic with coarse echotexture. Mildly increased vascularity is noted on colour doppler examination

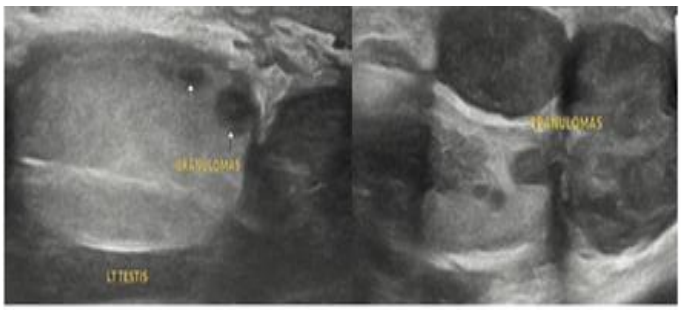

Figure 2:

Few subcentimeteric well defined rounded hypoechoic lesions with increased vascularity on colour doppler examination are noted involving bilateral testicular parenchyma largest of size measuring 4mm suggestive of infective granulomas. Both testis however appear normal in size.

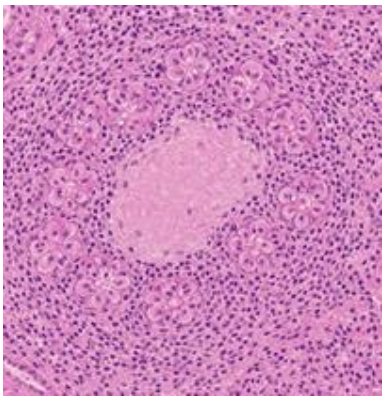

Figure 3:

Biopsy of the infective granulomas was performed in which the examination revealed a chronic granulomatous inflammation with caseous necrosis and multinucleated Langhans giant cells suggestive of tuberculosis.

Discussion

Scrotal tuberculosis is a rare but significant manifestation of genitourinary tuberculosis (GUTB). It most commonly affects the epididymis but can also involve the testis, vas deferens, and scrotal skin. Due to its nonspecific presentation, it is often misdiagnosed as bacterial epididymo-orchitis, scrotal abscess, or testicular tumors, leading to delayed diagnosis and treatment.

Scrotal tuberculosis is more prevalent in regions with high TB burden and is usually secondary to renal or pulmonary TB, though primary genital TB can also occur. Risk factors include HIV infection, immunosuppression, and prior tuberculosis exposure.

Clinical presentation varies, but patients often report painless scrotal swelling and discomfort. Diagnosis is challenging due to its slow progression and similarity to other scrotal pathologies. Imaging studies aid in diagnosis: Ultrasound typically reveals heterogeneous hypoechoic lesions in the epididymis or testis. MRI can help differentiate scrotal TB from malignancy. Histopathology demonstrating caseating granulomas confirms TB.

Conclusion

This case report highlights the characteristic ultrasound (USG) features of scrotal tuberculosis and underscores the crucial role of imaging in its diagnosis and management. USG played a key role in detecting and assessing the extent of the disease, aiding in treatment planning and prognosis. A high index of suspicion is essential, particularly in high TB prevalence regions and in patients with risk factors such as HIV infection and immunosuppression. While USG and MRI provide

valuable diagnostic insights, histopathological confirmation of caseating granulomas remains the gold standard Timely initiation of anti-tubercular therapy (ATT) leads to successful outcomes in most cases, with surgery reserved for complications. Early diagnosis and appropriate treatment are crucial in reducing morbidity and preventing unnecessary surgical interventions. This case emphasizes the complementary role of USG and histopathology in evaluating scrotal tuberculosis. The patient's clinical presentation and imaging findings align with scrotal tuberculosis, a rare and complex manifestation of genitourinary tuberculosis. By contributing to the existing literature, this report reinforces the importance of radiological evaluation in the early detection and effective management of scrotal tuberculosis.

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