

Integration of Clinicopathological and Microbiological Evaluation in The Diagnosis of Tuberculous Epididymo- Orchitis- A Case Report

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Abstract

Genitourinary tract Tuberculosis is a common cause of extrapulmonary Tuberculosis caused by Mycobacterium tuberculosis. Tuberculosis of the testis and epididymis is rarely associated with scrotal fistula. We present a case of advanced Tuberculous epididymo- orchitis who was unresponsive to empirical therapy for epididymo- orchitis . Orchidectomy was done to rule out malignancy. Pre operative differentiation of Tuberculous epididymo- orchitis from non tuberculous epididymo- orchitis and testicular tumor is difficult. Integration of histopathology with microbiological evaluation is important in diagnosis and management of GUTB

Keyword: - epididymo orchitis, Genitourinary , seminoma

Abbreviation -

TB- Tuberculosis

GUTB- Genitourinary tract Tuberculosis

EPTB - extra pulmonary Tuberculosis

HIV -Human immunodeficiency Virus

VDRL -Venereal disease research laboratory test

AFB - Acid Fast Bacilli

Introduction

Genitourinary tract Tuberculosis is the most common extra-pulmonary Tuberculosis after TB of lymph node. Tuberculous epididymo- orchitis is one of the common form of Genitourinary tract tuberculosis which may mimic testicular carcinoma¹. 28% patients will have genital involvement ,with Tuberculous of epididymis being the common presentation, however tuberculous

orchitis is rare². Extra-pulmonary tuberculosis(EPTB) presents a diagnostic and therapeutic challenge .Clinically, tuberculous infection of the scrotum cannot be distinguished from lesions such as tumor and infarction. Tuberculous epididymo orchitis mimics testicular tumors in apparently healthy patients with no other clinical symptoms or signs. Thus this diagnostic dilemma may result in inappropriate surgical procedure for a fine needle aspiration could be quite helpful in the diagnosis³.

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We report a patient with differential clinical diagnosis of testicular tumour, testicular infarction and acute suppurative orchitis who underwent orchidectomy. Histopathological diagnosis of tuberculous epididymo-orchitis was made and managed with anti tuberculous therapy

CASE REPORT

47years old Male presented with complaints of pain and swelling in the left scrotum since 6 months for which he had taken treatment from a general practitioner. However he was not responding to treatment. Since 1 month he developed discharging sinus from the scrotum, so he came to the surgery OPD in our hospital. There was no history of systemic pulmonary tuberculosis. No history of testicular trauma.

Local examination revealed a swelling in the scrotum with a pus like discharge from the skin with adjacent skin appeared edematous and inflamed. Transillumination test was negative. The epididymis and testis could not be palpated separately, Per Rectum examination was unremarkable. No palpable inguinal lymph nodes were palpable. USG revealed a nodular enlargement of left epididymis. Left testis was enlarged with heterogenous hypoechoic nodule in the testis with thickening of overlying skin of scrotum. Differential diagnosis of acute suppurative orchitis, testicular tumor and testicular infarct was made. Right testis was normal in size and echogenicity with dilated veins suggestive of Varicocele was detected. Routine blood tests including hemoglobin WBC count, platelet count were in normal limit. HIV and VDRL test was negative. Chest Xray was Normal. Patient was started on antibiotics. However he did not respond to treatment. Due to prolonged orchitis which was refractory to medical management left orchidectomy was performed with excision of the fistulous tract to rule out malignancy. The mass measured around 8x 5 x 4 cms with thickened scrotum sac having wall thickness of 0.8 cms (Figure 1). The sac contained whitish turbid fluid and nodules over the surface of the testis. Cut sections revealed a yellowish nodule extending from head into the testis (Figure 2). The testis measures 2 x 1.8 cms. The nodule measures 4x3.5x3 cms. Second nodule was present on the upper end of the epididymis measuring 2 x 1.5 x 1 cms. The sinus tractor was filled with yellowish necrotic debris.

Histopathological examination of the sections from testis, epididymis, scrotal sac and skin revealed caseating epithelioid granulomas with Langhans giant

cells. (figure 3, Figure 4). AFB was Positive in all the sections. The patient was started on anti Tuberculous therapy and is followed up



Figure 1 - Gross appearance of left testis

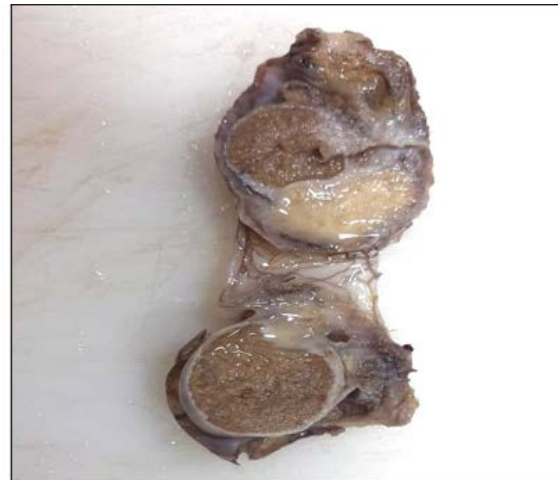


Figure 2 - Cut section of testis showing yellowish nodule

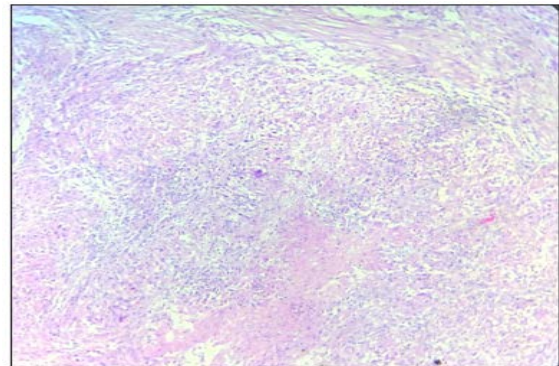


Fig 3 - Caseating granulomas admixed with lymphocytes (20 X)

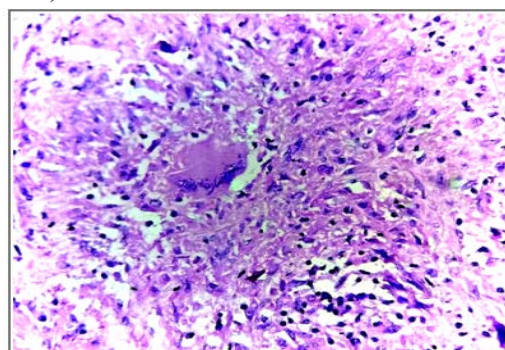


Fig 4 - Langhans giant cell in a granuloma surrounded by lymphocytes.(40X)

DISCUSSION

Due to the rise of Immunocompromised patients with HIV, the incidence of Tuberculosis has increased over the past decades. Genitourinary Tuberculosis represents 2 to 4% of the cases which is approximately 15% of extrapulmonary TB. Tubercle bacilli may invade one or more or even all the organs of the Genitourinary tract and cause granulomatous infections⁴. Primary TB of genitourinary tract is a disease of young adults. 80% of patients are between the age of 20 to 40 years⁵. Genitourinary Tuberculosis is more common in males than in females. The infecting organisms Mycobacterium Tuberculosis which reaches the genitourinary tract organs by hematogenous route from the lungs. Patients with Genitourinary tract TB have primary TB in the lung⁶. However our case had normal chest radiograph and correlated with the study of Gomez Gracia et al⁷. The kidney and possibly the prostate are the primary sites of tuberculous infection in the genitourinary tract. All other genitourinary tract organs become involved by either ascent (prostate, bladder) or descent (kidney to bladder, prostate to epididymis). The testis may become involved by direct extension from epididymal infection. Tuberculosis of the prostate can extend along the vas or through the peri vascular lymphatics and affect the epididymis. Because this is a slow process there is no pain and the duration of the symptoms varies from days to years,^{8,9}

Epididymo- testicular induration are associated with beading of the vas deferens and if extensive leads to scrotal abscess which may rupture through the scrotal skin thus establishing a permanent sinus or can extend into the testis leading to Tuberculous orchitis. The affected epididymis and testis are typically moderately enlarged with induration and thickened Tunica⁷, similar gross findings were seen in our case.

There is a secondary hydrocele in 30% of patients which was also seen in our case¹⁰. The diagnosis is usually confirmed by histopathological examination and isolation of Mycobacterium tuberculosis. The granulomas destroy the seminiferous tubules, germ cells and Sertoli cells causing hypogonadism and infertility is common. The granulomas contain central necrotic area surrounded by epithelioid cells and Langhans giant cells. Caseous granulomas with demonstration of AFB helps in classifying the granulomatous epididymo- orchitis as Tuberculous epididymo- orchitis⁶

The differential diagnosis of chronically enlarged testis includes numerous benign and malignant etiologies. Although the incidence of benign testicular lesions is high, most cases are still treated with radical orchidectomy due to difficulty in differentiating these disorders

preoperatively¹¹.

The major differential diagnosis of granulomatous epididymo- orchitis are testicular syphilis, testicular tumor, bacterial epididymo- orchitis, spermatogenic granuloma, idiopathic granulomatous orchitis and lymphoma¹². Testicular syphilis is rare and diagnosis is made on history and serological tests for syphilis. Serological test for our patient for syphilis was negative. Histology shows lymphocytes and plasma cells at the edge of granulomas.

Testicular tumors will be harder, nodular and without tenderness. The tumor markers like HCG, AFP and LDH may be elevated. In our cases no such markers were done preoperatively. Marked granulomatous reaction occurs in some areas of seminomas and may sometimes be florid reaction involving entire tumor. Such histological findings may pose a problem in distinguishing between a very severe granulomatous reaction in a seminoma and a seminoma arising in preexisting granulomatous orchitis. No germ cell element was found in our case.

Careful review of pathology is required to exclude malignancy with granulomatous disease. Differential diagnosis of granulomatous epididymo- orchitis is complex and requires integration of microbiological and histological findings.

CONCLUSION

Tuberculosis is the most common cause of granulomatous lesions of various sites including epididymis. TB Orchitis is rare and poses a diagnostic challenge. Integration of histopathology with microbiological evaluation is important in diagnosis and management of GUTB.

Informed consent was taken from the patient. - yes

Ethical clearance- Taken from institutional Ethics committee.

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Conflict of Interest - Nil.

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