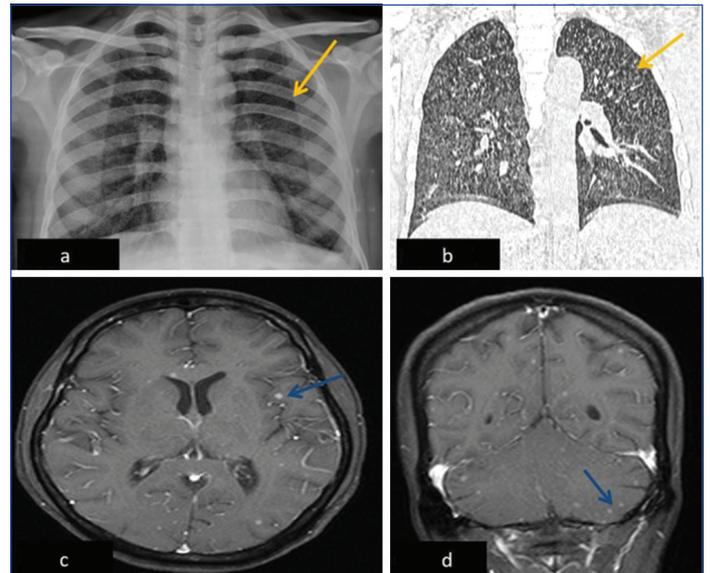


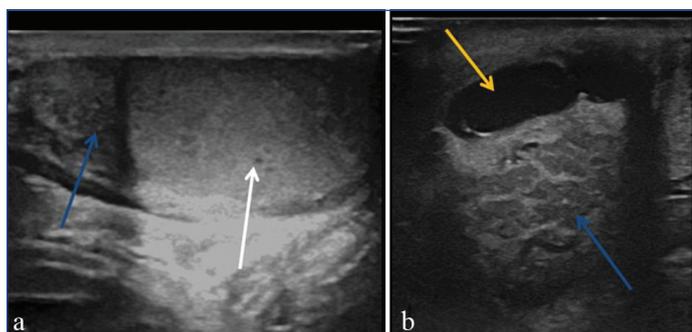
# A Case of Disseminated Tuberculosis Presenting as Scrotal Swelling

REVATHI RAJAGOPAL<sup>1</sup>, SENTHIL KUMAR AIYAPPAN<sup>2</sup>
**Keywords:** Epididymo-orchitis, Magnetic resonance imaging, Ultrasound

A 28-year-old male patient presented with right-sided scrotal swelling and pain for the past two months. He had a history of loss of appetite and weight, as well as fever for the past 10 days. He had no co-morbidities. Complete blood count and blood chemistry, including fasting blood glucose, renal, and liver function tests, were normal. Scrotal Ultrasonography (USG) revealed an enlarged right testis and epididymis with heterogeneous echotexture in the right testis and multiple small hypoechoic lesions within it. There was also a focal fluid collection with septations in the right scrotal sac, adjacent to the epididymis [Table/Fig-1a,b]. Increased vascularity in the testis and epididymis indicated inflammation. These ultrasound findings suggested right epididymo-orchitis with an abscess in the extratesticular space of the right scrotal sac, near the epididymis. Abdominal ultrasound was normal. Chest X-ray revealed multiple miliary nodules in both lung fields and a small left-sided pleural effusion, which was confirmed on chest CT [Table/Fig-2a,b]. Contrast-enhanced Magnetic Resonance Imaging (MRI) of the brain showed multiple small enhancing lesions in the bilateral cerebral and cerebellar hemispheres, as well as the brainstem, with smooth leptomeningeal enhancement. These findings were suggestive of multiple tuberculomas with meningitis [Table/Fig-2c,d]. The patient later underwent drainage of right scrotal abscess and right epididymo-orchidectomy, as the epididymis had sloughed-off due to infection [Table/Fig-3]. Mycobacterium tuberculosis was detected in the pus sample using the Mycobacterium tuberculosis Deoxyribonucleic Acid (DNA) test, with no resistance to rifampicin. The patient responded well to antitubercular therapy and is currently being followed-up.



**[Table/Fig-2]:** a) Chest radiograph shows diffuse 1-2 mm nodules, findings that are typically seen in miliary tuberculosis (yellow arrow); b) High-resolution Computed Tomographic (CT) scan coronal image demonstrates similar nodules in a random distribution (yellow arrow). c, d) Contrast enhanced MRI brain shows multiple tuberculomas (blue arrow) with pachymeningeal enhancement.



**[Table/Fig-1]:** USG scrotum shows bulky and heterogenous right testis (white arrow) and epididymis with few tiny hypoechoic foci within it (blue arrow); b) Heterogenous echotexture of epididymis (blue arrow) suggestive of epididymitis with collections within it (yellow arrow).



**[Table/Fig-3]:** Gross specimen of testis and epididymis showing features of epididymitis.

## DISCUSSION

Pulmonary Tuberculosis (TB) is the most common manifestation of tuberculosis, and extrapulmonary tuberculosis is seen in only 8-15% of cases. Among extrapulmonary tuberculosis, lymphnode involvement is the most common form in India [1]. Genitourinary tuberculosis comprises only 8-15% of extrapulmonary tuberculosis [1,2]. Isolated genital involvement is seen in 28% of patients with genitourinary tuberculosis [3,4]. Testicular TB is even rarer,

accounting for only 3% of genital TB cases [1,2]. The epididymis is the most commonly affected site in men, followed by the seminal vesicles, prostate, testis, and vas deferens. TB epididymo-orchitis typically develops from the retrograde spread of tubercle bacilli from the affected urinary tract into the prostate through reflux, followed by canalicular spread to the seminal vesicle, deferent duct, and epididymis [5,6]. However, haematogenous and lymphatic spread

have also been described. Testicular involvement is commonly due to local spread or retrograde seeding from the epididymis, and rarely through haematogenous spread [5,6]. Tubercular involvement of the testis often occurs alongside TB involvement of the lower urinary tract or kidneys, leading to possible voiding symptoms and haematuria. Other manifestations of genitourinary tuberculosis include epididymo-orchitis, prostatitis, scrotal swelling with or without discharging sinus [7,8], and infertility. In this case, the initial presentation was only right-sided scrotal swelling and pain, without any discharging sinuses or urinary tract symptoms, which is quite unusual. Scrotal swelling was the most common complaint in tubercular epididymo-orchitis, followed by pain, as reported in a study by Huang Y et al., [8]. In their study of 81 cases, only 12.3% of patients had tubercular involvement of other organs, which is relatively less common [8]. Common complications of testicular tuberculosis include scrotal abscess, scrotal sinus tract, and extratesticular calcification [9]. Intrascrotal extratesticular calcification commonly affects the epididymis and the tunica vaginalis covering the testes. The formation of a scrotal fistula carries a poor prognosis. The

present case highlights the importance of considering tuberculosis as a differential diagnosis for acute epididymo-orchitis.

## REFERENCES

- [1] Hadadi A, Pourmand G, Mehdipour-Aghabagher B. Unilateral testicular tuberculosis: Case report. *Andrologia*. 2012;44:70-72.
- [2] Viveiros F, Tente D, Espiridião P, Carvalho A, Duarte R. Testicular tuberculosis: Case report. *Rev Port Pneumol*. 2009;15:1193-97.
- [3] Shah H, Shah K, Dixit R, Shah KV. Isolated tuberculous epididymo-orchitis. *Indian J Tuberc*. 2004;51:159-62.
- [4] Gurubacharya RL, Gurubacharya SM. A 14-year-old boy with isolated tuberculous orchitis. *J Nepal Paediatr Soc*. 2009;29:30-32.
- [5] Wise GJ, Shteynshlyuger A. An update on lower urinary tract tuberculosis. *Curr Urol Rep*. 2008;9:305-13.
- [6] Viswaroop BS, Kekre N, Gopalakrishnan G. Isolated tuberculous epididymitis: A review of forty cases. *J Postgrad Med*. 2005;51:109-11.
- [7] Garbyal RS, Sunil K. Diagnosis of isolated tuberculous orchitis by fine-needle aspiration cytology. *Diagn Cytopathol*. 2006;34:698-700.
- [8] Huang Y, Chen B, Cao D, Chen Z, Li J, Guo J, et al. Surgical management of tuberculous epididymo-orchitis: A retrospective study of 81 cases with long-term follow-up. *BMC Infect Dis*. 2021;21(1):1068.
- [9] Shugaba AI, Rabi AM, Uzokwe C, Matthew RM. Tuberculosis of the testis: A case report. *Clin Med Insights Case Rep*. 2012;5:169-72.

### PARTICULARS OF CONTRIBUTORS:

1. Junior Resident, Department of Radiodiagnosis, SRM Medical College Hospital and Research Centre, Kattankulathur, Chengalpattu, Tamil Nadu, India.
2. Professor and Head, Department of Radiodiagnosis, SRM Medical College Hospital and Research Centre, Kattankulathur, Chengalpattu, Tamil Nadu, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Senthil Kumar Aiyappan,  
Professor and Head, Department of Radiodiagnosis, SRM Medical College Hospital and Research Centre, Kattankulathur, Chengalpattu-603203, Tamil Nadu, India.  
E-mail: asenthilkumarpgi@gmail.com

### AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

### PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Jan 14, 2022
- Manual Googling: Mar 22, 2023
- iThenticate Software: Apr 05, 2023 (20%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

Date of Submission: **Jan 13, 2023**  
Date of Peer Review: **Mar 29, 2023**  
Date of Acceptance: **Apr 07, 2023**  
Date of Publishing: **Jul 01, 2023**