JMSR
Journal of Medical and Surgical Research

Case Report

ISSN: 2351-8200

JMSR 2025 Vol XII, n 1: 1470-1472

A CASE REPORT OF CALCIFYING FIBROUS TUMOR OF THE PARATESTIS: A MALIGNANCY MIMICKER

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DOI: 10.46327/msrjg.1.000000000000274
Published in August 2025

Abstract

Introduction: *Calcifying fibrous tumor is among the most rarely seen benign lesion in the paratestis. It often clinically mimics malignancy and usually leads to an unnecessary radical orchiectomy. We present a new case of this rare lesion with literature review of the clinical and the morphological features.* ***Case report:*** *A 24-year-old male patient presented to the department of urology with a 10 years history of enlarging palpable intrascrotal mass, becoming painful in the last 2 years. Physical examination revealed a stony right hemiscrotum with no other pathological sign. The radiologists have concluded to an epididymal lesion suspected of malignancy. Right radical orchiectomy was performed. The histological analysis of the specimen and the immunohistochemistry staining was consistent with calcifying fibrous tumor.* ***Conclusion:*** *We report this case with the aim of considering the calcifying fibrous tumor as a possible diagnosis when assessing a patient with paratesticular lesion and redirecting the treatment decision to a testis sparing surgery.*

Keywords: *Calcifying fibrous tumor, paratestis, testis, pathology, urology.*

Introduction

Calcifying fibrous tumor is a very rare benign tumor, occurring uncommonly in the paratestis. The diagnosis is usually made on postoperative histology. It clinically mimics malignancy, leading wrongly to an overtreatment and an unnecessary orchiectomy. We report a case of this infrequent lesion involving the paratestis in a young patient.

Case Report

A 24-year-old male patient presented to the department of urology with a 10-year history of enlarging palpable intra-scrotal mass, becoming painful in the last 2 years. He denied any history of scrotal trauma, previous infection or surgical intervention. Physical examination revealed a stony enlarged right hemiscrotum with no other pathological sign. Laboratory investigations revealed normal blood cell count, as well as a serum AFP, LDH, and HCG within the normal range.
Scrotal ultrasound showed a round well delimited right intravaginal collection measuring 2 cm in its larger diameter. The testis and the epididymis were normal. Magnetic resonance imaging (MRI) revealed a well limited right scrotal lesion measuring 35 mm in its larger diameter, appearing to be dependent on the epididymis, with regular contours, hypointense on T2 and isointense on T1(**Figure 1**), associated with a right hydrocele of low abundance and a left varicocele. The radiologists have concluded that it is an epididymal lesion suspected of malignancy. Uncomplicated right radical orchiectomy was performed.

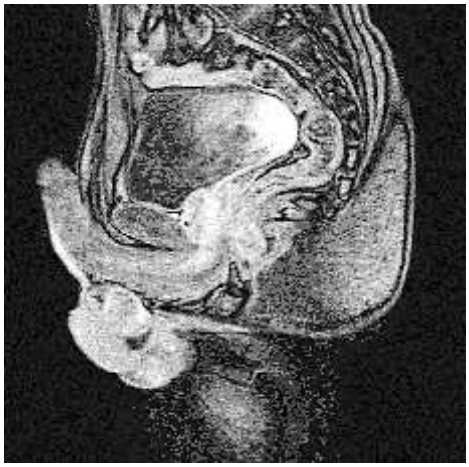

Figure 1: Magnetic resonance imaging (MRI) showing a heterogeneous lesion in the right hemiscrotum.

Macroscopically, the mass measured 4x3 cm, had a clear boundary and appeared as a solid, firm, and whitish tumor on sectioning (***Figure 2a***). Microscopically, we objectified a paucicellular fibroblastic proliferation made of regular spindle

cells arranged within a dense collagenous tissue with psammomatous calcifications associated to a discrete inflammatory infiltrate made up of lymphocytes and plasmocytes (***Figure 2b***). Immunohistochemically, spindle cells showed

diffuse positivity for factor XIIIa, CD34 and IgG4 (***Figure 2c***) and negativity for anaplastic lymphoma kinase (ALK) (Figure 2d), PS100, desmin, smooth muscle actin (SMA) and beta-catenin, consisting with a calcifying fibrous tumor.

Figure 2a A well-circumscribed, solid whitish mass involving the paratestis (gross specimen)

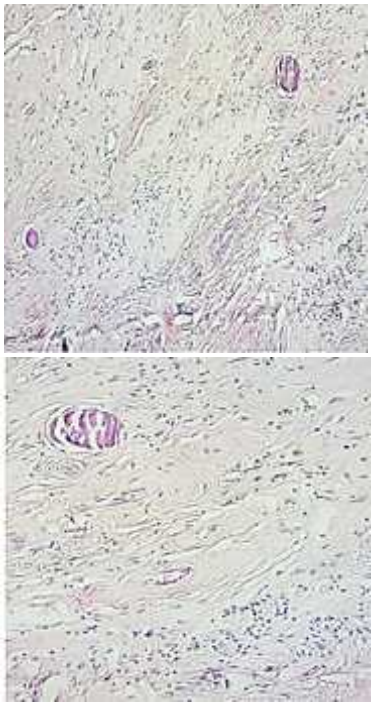

Figure 2b: Hematoxylin-eosin-stained specimen illustrating hyalinized collagen bands with psammomatous calcification and infiltrated lymphocytes and plasma cells (HE x100) (HE x200)

Figure 2c: The fibroblasts show positive immunohistochemical cytoplasmic staining for Factor XIIIa (**left**), for CD34 (**middle**) and for IgG4 (**right**)

Figure 2d: Negative stain for anaplastic lymphoma kinase (ALK).

Discussion

Calcifying fibrous tumor is a rare benign soft tissue lesion first described in children by Rosenthal and Abdul-Karim [1]. It is most commonly observed in the gastrointestinal tract and pleura. Its occurrence in the paratestis is even rarer, with just a few cases documented. Most calcifying fibrous tumors are considered to represent different evolutionary stages of the same lesion with early stages showing prominent inflammation and myofibroblastic proliferation, and more advanced stages evolving into paucicellular, heavily collagenized fibrous nodules [2].

Due to its variable clinical presentation and histological features, this tumor has been described under various terminologies. This entity has been

officially classified as a calcifying fibrous tumor by the World Health Organization since 2002 [3].

Some studies suggested that, based on its histological similarities to other fibroinflammatory disorders with IgG4-expressing plasma cell infiltrates, calcifying fibrous tumor may belong to the spectrum of IgG4-related diseases [2]. However, despite these observations and the fact that some cases have occurred following trauma or in association with Castleman disease, the precise pathogenesis remains unclear [4].

Clinically, it is a painless slow growing mass, occasionally with an associated hydrocele. The lesion can vary significantly in size and may appear as either a solitary or multiple mass, located in the scrotum or inguinal region, and may occasionally mimic a testicular malignancy. Most reported cases are confined to the tunica vaginalis, although some cases have involved the tunica albuginea, epididymis, or spermatic cord [5].

On ultrasound, the lesion typically appears as a well-defined mass with acoustic shadowing, caused by the dense fibrotic core and calcifications. A concurrent hydrocele is the most frequently reported associated finding. On magnetic resonance imaging (MRI), the lesion closely resembles fibromatoses, showing a mottled appearance with low signal intensity on both T1 and T2-weighted images [6,7].

On gross section, the mass is well circumscribed, unencapsulated, somewhat lobulated and solid or firm, ranging in size from < 1 to 15 cm. It presented as a uniform gray-white fibrous appearance on a cross section. It often cuts with a gritty sensation because of the extensive calcifications that are typically present.

Histologic examination reveals a well circumscribed lesion composed of an hypocellular hyalinized fibrous tissue with a variable patchy inflammatory infiltrate consisting of lymphocytes and plasma cells, as well as psammomatous and dystrophic calcification. The immunoprofile of the fibroblasts is typically vimentin and factor XIIIa positive. CD34 immunoexpression can be seen occasionally. With mostly lack expression of actin and anaplastic lymphoma kinase (ALK).

Local excision of the tumor has been reported as the treatment of choice. To date, no cases of recurrence have been documented following complete surgical excision strengthening an organ-sparing surgery. In situations where there is intraoperative suspicion of malignancy, frozen section examination can be utilized to assist in guiding the extent of surgical intervention [3].

Conclusion

Calcifying fibrous tumor (CFT) of the paratestis is a benign entity that can clinically and radiologically mimic malignancy. This case highlights the critical need for heightened clinical awareness among urologists and surgical teams when evaluating paratesticular masses, particularly in young patients. Early recognition and appropriate intraoperative assessment can support organ-sparing strategies, reduce patient morbidity, and avoid overtreatment.

References

1. Rosenthal NS, Abdul-Karim FW. Childhood fibrous tumor with psammoma bodies. Clinicopathologic features in two cases. Arch Pathol Lab Med. 1988; 112(8): 798–800.
2. Bösmüller H, Von Weyhern CH, Adam P, Alibegovic V, Mikuz G, Fend F. Paratesticular fibrous pseudotumor-an IgG4-related disorder? Virchows Arch. 2011;458(1):109–113.
3. W. Kang, Z. Cui, X. Li, P. Sun, X. Jin. Calcifying fibrous tumor of the tunica vaginalis testis: a report of 2 cases. Urology, 100 (2017), 100: pp. e9-e13.
4. İsmail Harmankaya; Nevzat Serdar Ugras; Tamer Sekmenli; Fatih Demir; Yavuz Köksal. Calcified fibrous pseudotumor with Castleman disease. Autops case rep. 2018; 8 (3): e2018033.
5. Raja R. Seethala, A. Temel Tirkes, Susan Weinstein, John E. Tomaszewski, S. Bruce Malkowicz, Elizabeth M. Genega. Diffuse fibrous pseudotumor of testicular tunics associated with an inflamed hydrocele. Arch Pathol Lab Med (2003) 127, no. 6: 742–44.
6. Payne, J. A., Adler, B. H., Mangray, S., & Alpert, S. A. (2019). Free-floating Paratesticular Calcifying Fibrous Pseudotumors in a Pediatric Patient. Urology, 128, 84-86.
7. Montgomery E: Calcifying fibrous tumor. Fletcher CDM, Unni KK, Mertens F, editors. World Health Organization Classification of Tumors, pathology and genetics of tumors of soft tissue and bone. Lyon: IARC Press; 2002. 77-8.