

# Fibrous Pseudotumor of the Epididymis: Case Report and Literature Review

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**Abstract:** Fibrous paratesticular pseudotumor is a rare benign condition that can mimic scrotal neoplasms and lead to unnecessary orchiectomy. We report a 21-year-old man who presented with acute right hemiscrotal pain and swelling. Ultrasound showed a solid extratesticular hyperechoic nodule in the tail of the right epididymis with preserved testicular vascularity, and pelvic magnetic resonance imaging demonstrated a circumscribed lesion that was hypointense on T2-weighted sequences, without diffusion restriction, and with post-contrast enhancement—features consistent with fibrous proliferation. Testis-sparing local excision was performed and histopathology confirmed a fibrous pseudotumor of the epididymis. A brief literature review is provided, emphasizing the role of MRI and intraoperative frozen section to avoid orchiectomy, the possible association with IgG4-related disease in a subset of patients, and the excellent prognosis after complete excision.

**Keywords:** Fibrous Pseudotumor, Epididymis, Paratesticular Mass, IgG4-Related Disease, Testis-Sparing Surgery

## I. Introduction

Paratesticular fibrous pseudotumor (PFP) is a rare benign fibroproliferative lesion that accounts for roughly 6% of paratesticular masses and has been historically described under multiple names; its appearance may closely simulate malignancy [1], [4].

The tunica vaginalis is the most frequently involved site, although the epididymis and spermatic cord may also be affected [3], [9].

Current evidence supports a reactive/inflammatory pathogenesis; during the last two decades, a subset of cases has been linked to the spectrum of IgG4-related disease (IgG4-RD) [5], [6], [10].

## II. Case Report

A 21-year-old male, previously healthy, presented to the emergency department with one day of right hemiscrotal pain and swelling, denying trauma, fever, or urethral discharge.

Focused examination revealed orthotopic testes and tenderness over the tail of the right epididymis, with no overlying skin changes. Doppler ultrasound demonstrated a solid extratesticular hyperechoic nodule at the right epididymal tail and preserved intratesticular vascularity; the patient was discharged with analgesics.

Five days later he returned with persistent pain and increased volume of the right hemiscrotum. Tumor markers were within normal limits (alpha-fetoprotein 2.03 ng/mL,  $\beta$ -hCG non-reactive, LDH 226 U/L).

Pelvic magnetic resonance imaging demonstrated a circumscribed, hypointense T2-weighted nodule in the tail of the right epididymis, without diffusion restriction and with contrast enhancement (figure 1,2) and T1 enhancing nodule at the tail of the right epididymis (figure 3).

Surgical exploration allowed complete lesion excision with testis preservation.

Histopathology confirmed a fibrous pseudotumor of the epididymis. The patient was discharged with outpatient follow-up; control ultrasound and semen analysis were scheduled for six months.

## III. Discussion

Clinically, PFP presents as a firm paratesticular mass, often associated with hydrocele, and may be painless—features that can confound it with testicular tumors [1], [2], [3].

Ultrasound is the first-line modality; when indeterminate, MRI helps by demonstrating extratesticular nodules that are iso- to hypointense on T1-weighted images, hypointense on T2-weighted images, and enhancing after contrast [3], [4].



Histologically, PFP shows a paucicellular fibrocollagenous proliferation with a lymphoplasmacytic infiltrate; immunostaining for IgG4 may be increased in a subset of cases, supporting an IgG4-RD association [6], [5], [10].

Importantly, in contrast to inflammatory myofibroblastic tumor, ALK-1 is typically negative in PFP, which assists in the differential diagnosis [7].

When malignancy cannot be excluded intraoperatively, frozen-section assessment is recommended to enable testis-sparing surgery and avoid unnecessary orchiectomy [8], [1], [2]. The treatment of choice is complete local excision. Prognosis is excellent, with low recurrence and preserved function when testicular parenchyma is spared [1], [9].

#### IV. Conclusion

Epididymal fibrous pseudotumor is rare and benign but may mimic testicular neoplasia. Clinicoradiologic correlation, intraoperative frozen section, and local excision enable safe, testis-sparing management. Awareness of the characteristic ultrasound and MRI features and of a possible link to IgG4-RD helps prevent unnecessary orchiectomy and optimizes outcomes.

#### Conflicts of Interest

The authors declare no conflicts of interest.

#### Figures

Figure 1. Axial T2-weighted sequence—hypointense nodule at the tail of the right epididymis.

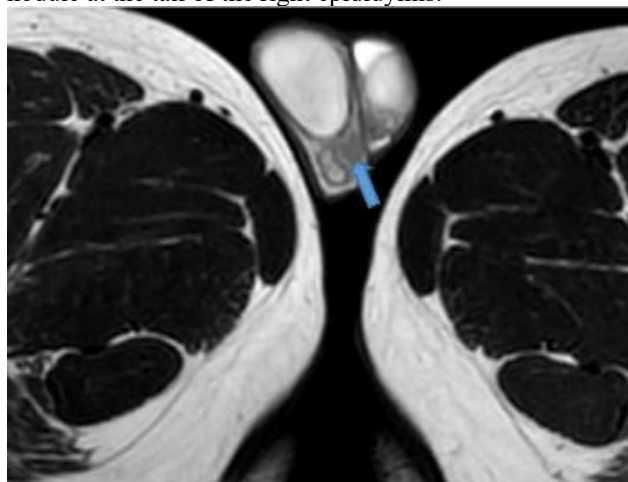


Figure 2. Axial diffusion-weighted sequence—no diffusion restriction within the nodule.

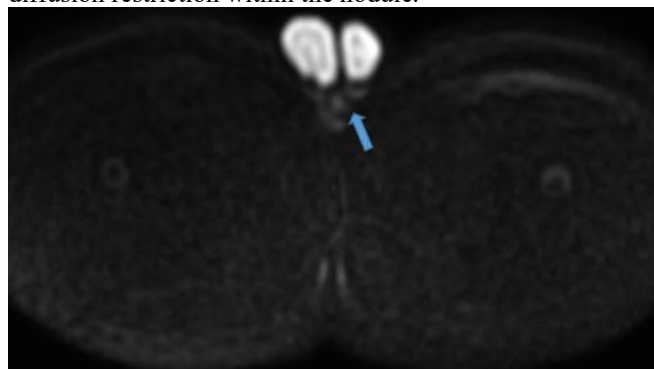
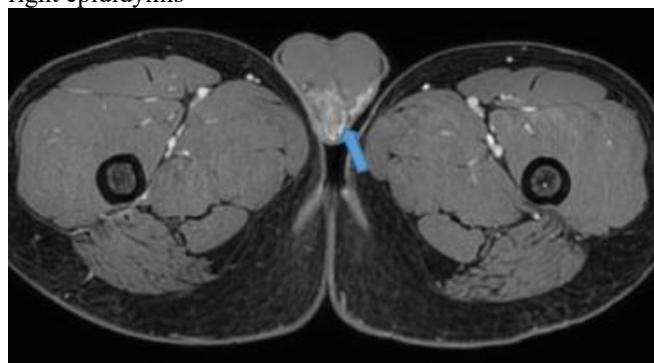


Figure 3. Axial T1—enhancing nodule at the tail of the right epididymis



#### References

1. Ş. Başal, E. Malkoç, E. Aydur, et al., "Fibrous pseudotumors of the testis: The balance between sparing the testis and preoperative diagnostic difficulty," *Turk J Urol*, vol. 40, no. 3, pp. 125–129, 2014. doi:10.5152/tud.2014.21284. PMID:26328164. Available at: <https://pubmed.ncbi.nlm.nih.gov/26328164/>
2. W. Benabdallah, A. Loghmari, M. Ben Othmane, et al., "Left paratesticular fibrous pseudotumor on the single testis and contribution of imaging in therapeutic management, a case report," *Int J Surg Case Rep*, 2023;105:108077. doi:10.1016/j.ijscr.2023.108077. PMID:36996707. Available at: <https://pubmed.ncbi.nlm.nih.gov/36996707/>
3. M. Bulakci, T. Tefik, M. G. Kartal, et al., "Imaging appearances of paratesticular fibrous pseudotumor," *Pol J Radiol*, vol. 81, pp. 10–14, 2016. doi:10.12659/PJR.895405. PMID:26834864. Available at: <https://pubmed.ncbi.nlm.nih.gov/26834864/>
4. F. H. Cassidy, K. M. Ishioka, C. J. McMahon, et al., "MR imaging of scrotal tumors and pseudotumors," *Radiographics*, vol. 30, no. 3, pp. 665–683, 2010. doi:10.1148/rg.303095049. PMID:20462987. Available at: <https://pubmed.ncbi.nlm.nih.gov/20462987/>
5. A. Crestani, L. Vassallo, A. Amodeo, et al., "Paratesticular fibrous pseudotumor with histological features of IgG4-related disease: two case reports and review of the literature," *Gland Surg*, vol. 12, no. 3, pp. 426–431, 2023. doi:10.21037/gs-22-290. PMID:37057041. Available at: <https://pubmed.ncbi.nlm.nih.gov/37057041/>
6. K.-P. Dieckmann, W. J. Struss, U. Frey, M. Nahler-Wildenhain, "Paratesticular fibrous pseudotumor in young males presenting with histological features of IgG4-related disease: two case reports," *J Med Case Rep*, vol. 7, 225, 2013. doi:10.1186/1752-1947-7-225. PMID:24025610. Available at: <https://pubmed.ncbi.nlm.nih.gov/24025610/>
7. H. Miyamoto, E. A. Montgomery, J. I. Epstein, "Paratesticular fibrous pseudotumor: a morphologic and immunohistochemical study of 13 cases," *Am J Surg Pathol*,

- vol. 34, no. 4, pp. 569–574, 2010. doi:10.1097/PAS.0b013e3181d2f084. PMID:20216379. Available at: <https://pubmed.ncbi.nlm.nih.gov/20216379/>
8. M. K. Subik, J. Gordetsky, J. L. Yao, P. A. Di Sant'Agnese, H. Miyamoto, "Frozen section assessment in testicular and paratesticular lesions suspicious for malignancy: its role in preventing unnecessary orchiectomy," *Hum Pathol*, vol. 43, no. 9, pp. 1514–1519, 2012. doi:10.1016/j.humpath.2011.11.013. PMID:22406369. Available at: <https://pubmed.ncbi.nlm.nih.gov/22406369/>
9. S. Ugras and C. Yesil, "Fibrous pseudotumors of tunica albuginea, tunica vaginalis and epididymis: report of two cases," *Cancer Epidemiol*, vol. 33, no. 1, pp. 69–71, 2009. doi:10.1016/j.canep.2009.03.002. PMID:19679051. Available at: <https://pubmed.ncbi.nlm.nih.gov/19679051/>
10. L. Zeitouni, F. Motiwala, N. Goyal, E. Watura, W. Mulhem, M. Y. Hammad, "IgG4 paratesticular fibrous pseudotumor: case presentation and literature review," *Urol Case Rep*, vol. 45, 102213, 2022. doi:10.1016/j.eucr.2022.102213. PMID:36164384. Available at: <https://pubmed.ncbi.nlm.nih.gov/36164384/>