

Free-floating Paratesticular Calcifying Fibrous Pseudotumors in a Pediatric Patient



James A. Payne, Brent H. Adler, Shamlal Mangray, and Seth A. Alpert

Paratesticular masses are a relatively common finding in males. The majority are benign, as opposed to testis masses, which tend to be malignant. Fibrous pseudotumors are rare, but are the third most common paratesticular tumor after adenomatoid and lipoma. The exact cause is unclear but likely from a fibroinflammatory reaction. Because of the non-specific findings on physical exam and scrotal ultrasound, patients may undergo scrotal exploration and occasionally orchiectomy, in spite of the benign nature of this lesion. Here we report the rare case of free-floating paratesticular calcifying fibrous pseudotumors in a prepubertal patient. *UROLOGY* 128: 84–86, 2019. © 2019 Elsevier Inc.

Fibrous pseudotumors of the scrotum have been rarely reported in pediatric patients, especially in prepubertal males. We present an unusual case of multiple free-floating calcifying fibrous pseudotumors of the scrotum in a young male patient and describe the radiographic and pathologic features of this benign mass.

CASE REPORT

An 11-year-old boy was referred by his primary care provider to the pediatric urology office for a “left testis mass” after an abnormality was noted on well-child exam. The patient had recently noticed multiple left-sided paratesticular masses. The patient was home schooled and therefore had not undergone a thorough physical exam for several years. He denied any pain or swelling of the scrotum. There was no history of trauma to the scrotum, although he had occasionally ridden horses in the past, which resulted in generalized groin soreness. He had no voiding complaints, hematuria, dysuria or history of urinary tract infection.

On examination, his testes were descended bilaterally, and no discrete testicular mass, hydrocele or hernia was appreciated. There were 2 well-circumscribed, smooth, non-tender, mobile lesions palpable adjacent to the left testicle, but were not originating from or obviously attached to the testicle within the left hemiscrotal sac. A scrotal ultrasound revealed 2 round, solid, avascular

predominantly hypoechoic masses. These were lateral to the testis and measured $1.6 \times 1.3 \times 1.5$ cm and $1.3 \times 1.2 \times 1.4$ cm. They had an unusual central calcification and were very homogeneous in echotexture with an almost laminar appearance (Fig. 1). The etiology was not immediately clear, however, large scrotal pearls or an unusual calcifying fibrous pseudotumor were in the differential.

The patient was subsequently taken to the operating room for scrotal exploration and excision of the paratesticular masses. A midline scrotal incision was made and the tunica vaginalis opened. Within the tunica, there were 2 smooth, white, round lesions that were firm and slick to the touch. Both of these were free-floating and mobile within the tunica and were not attached to the testicle or any other structures (Fig. 2). There were no other testicular abnormalities noted. One of the round lesions was bivalved, and there were a soft mushy outer coating and a hard, calcified center. Both of these specimens were sent to pathology for examination. The patient tolerated the procedure well and was discharged home the same day. He was seen for follow-up 1 month later and his

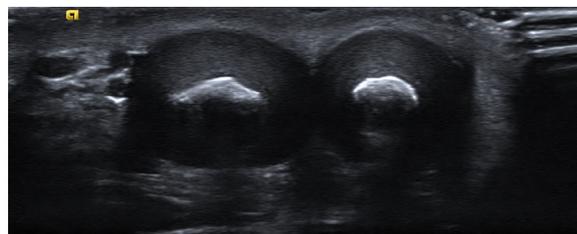


Figure 1. Longitudinal high resolution linear sonography demonstrates two round, solid masses separate from the testicle and epididymis. A laminar pattern was observed. Within each mass was a highly echogenic nidus suggesting a central calcification. No Doppler or color flow was detected within or around the masses.

Declarations of interest: None.

From the Department of Urology, The Ohio State University Wexner Medical Center, Columbus, OH; the Department of Radiology, Nationwide Children's Hospital, Columbus, OH; the Department of Pathology and Laboratory Medicine, Nationwide Children's Hospital, Columbus, OH; and the Section of Urology, Nationwide Children's Hospital, Columbus, OH

Address correspondence to: Seth A. Alpert, MD, Clinical Associate Professor of Urology, Nationwide Children's Hospital, 700 Children's Drive, Columbus, OH 43205. E-mail: seth.alpert@nationwidechildrens.org

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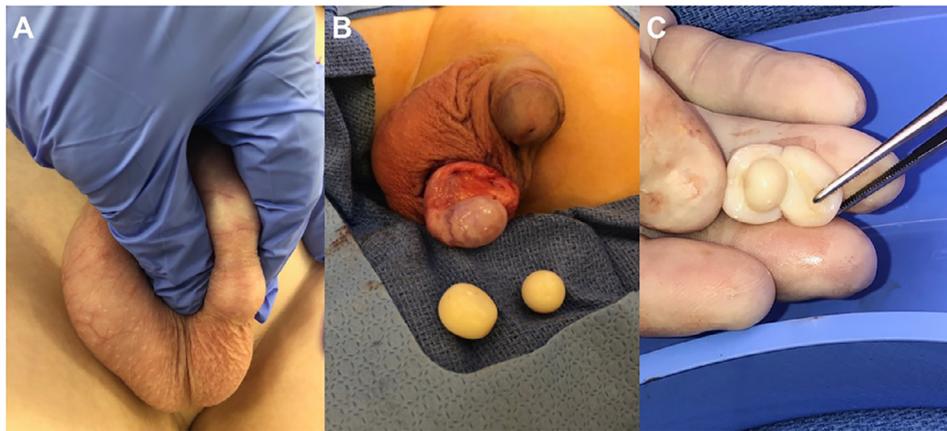


Figure 2. (A) Preoperative exam noting two, distinct, paratesticular masses within the scrotum. (B) Free floating paratesticular masses excised from within the tunica vaginalis. (C) Bivalved section of excised mass with calcified core.

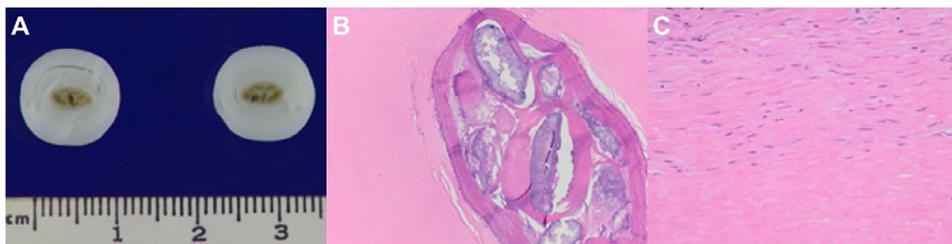


Figure 3. (A) Gross image of fibrous pseudotumor (laminated with central calcification). (B) Low power histologic image showing central calcification. (C) High power histologic image of spindle cells.

incision was well-healed and there was no evidence of recurrent scrotal mass.

Microscopic pathologic examination demonstrated benign pseudotumors composed of collagenized nodules with calcification and a rim of bland spindle cells, consistent with calcifying fibrous pseudotumor (Fig. 3).

DISCUSSION

A scrotal mass can be a worrisome finding in an adolescent male. Tumors originating from the testicle are often found to be malignant, however, paratesticular tumors are more common and tend to have a benign etiology.^{1,2} The differential for benign scrotal masses in the pediatric population is broad, and includes adenomatoid tumors, lipomas, leiomyomas, hemangiomas, and fibrous pseudotumors.¹⁻⁴

Fibrous pseudotumors of the testicular adnexa were first described by Balloch in 1904 and represent a rare pathologic entity.^{1,2} The exact etiology remains uncertain, but may be related to a benign fibroinflammatory reactive process caused by infection, trauma, surgery or other scrotal inflammation. While these tumors may present at any age, the peak incidence is within the third decade of life.⁵ Diagnosis in the pediatric population is extremely rare, with only a handful of cases reported in the literature.^{4,6}

This prepubertal patient is one of the youngest reported in the literature with fibrous pseudotumor of the scrotum. Additionally this patient had an uncommon variant of two, distinct, free-floating masses, as opposed to the smooth nodules associated with or attached to the parenchyma of other scrotal contents that are typically seen.¹⁻⁴

In these cases, a scrotal ultrasound may demonstrate acoustic shadowing due to the dense fibrotic core and associated calcification. An associated hydrocele is the most frequently found concomitant pathology,⁷ Magnetic resonance imaging has also been utilized to evaluate these lesions and usually demonstrates low signal intensity on both T1 and T2 weighted images due to the fibrosis.^{4,7} Surgical excision is the definitive therapy. If there is any concern for malignancy, a frozen section can be sent intraoperatively to confirm the diagnosis. This should be especially considered when the tumor mass involves the testicle.⁸ Prognosis with fibrous pseudotumors is excellent, with recurrence rarely reported.⁹

References

1. Rubenstein RA, Dogra VS, Seftel AD, Resnick MI. Benign intrascrotal lesions. *J Urol.* 2004;171:1765-1772.
2. Parker PM, Pugliese JM, Allen Jr RC. Benign fibrous pseudotumor of tunica vaginalis testis. *Urology.* 2006;68:427-e17.
3. Woodward PJ, Schwab CM, Sesterhenn IA. From the archives of the AFIP: extratesticular scrotal masses: radiologic-pathologic correlation. *Radiographics.* 2003;23:215-240.

4. Yu R, Terry J, Alnassar M, Demaria J. Pediatric fibrous pseudotumor of the tunica vaginalis testis. *Asian J Urol.* 2016;3: 99–102.
5. Khallouk A, Ahallal Y, Tazi E, et al. Benign paratesticular fibrous pseudotumor with malignant clinical features. *Rev Urol.* 2011;13: e203.
6. Miscia ME, Cecinati V, Fusillo M, et al. Paratesticular fibrous pseudotumor in children: a case report and review of literature. *J Pediatr Hematol Oncol* 2018.
7. Nazim SM, Nusrat A, Kazmi Z. Fibrous pseudotumor of Tunica albuginea testis mimicking testicular neoplasm in a young man. *Case Rep Surg.* 2018;2018:9315864. <https://doi.org/10.1155/2018/9315864>.
8. Tuygun C, Öztürk U, Goktug HNG, Zengin K, Sener NC, Bakirtas H. Evaluation of frozen section results in patients who have suspected testicular masses: a preliminary report. *Urol J.* 2014;11:1253–1257.
9. Başal Ş, Malkoç E, Aydur E, et al. Fibrous pseudotumors of the testis: The balance between sparing the testis and preoperative diagnostic difficulty. *Turk J Urol.* 2014;40:125.