Fibrous Pseudotumor of the Tunica Vaginalis of the Scrotum: Is there a Typical Ultrasound Pattern?

Introduction

The fibrous pseudotumor of the scrotum is a relatively rare benign condition that clinically often mimics malignancy. Consequently, the diagnosis is usually performed only after orchidectomy. Our goal was to determine if there are any US features which are indicative of benignity in order to avoid excision of the testis based on these 3 cases.

Case 1

A 42-year-old man presented to the surgical outpatient department for a left scrotal swelling associated with subacute tenderness and discomfort. The lesion, initially painless, was already known by the patient and had gradually increased in size over a period of 2 years, with progressive tension and discomfort over the previous weeks. The only previous history was a radical prostatectomy for a prostatic carcinoma (stage pT2, Gleason score 3+4) 6 months before. On clinical examination, a hard, irregular tender mass was palpated simulating a large solid right testicular mass. Because of the clinical suspicion of malignancy, a right orchidectomy was performed. The testis was uninvolved and surrounded by an irregular thickened tunica vaginalis. The pathological analysis confirmed the diagnosis of a benign fibrous pseudotumor of the tunica vaginalis.

Case 2

A 59-year-old man reported a progressive painless swelling of the right scrotum for 8 months. There was no previous history of a testicular abnormality. The patient underwent a transurethral resection for a prostatic hyperplasia one year ago. Ultrasound examination revealed multiple hard nodules were palpated simulating a large solid right testicular mass. The pathological analysis confirmed the diagnosis of a benign fibrous pseudotumor of the tunica vaginalis.

Case 3

A 25-year-old man presented similar symptoms over a period of 2 years. The patient had no significant medical history. Clinical data were similar to those of case 1. Surgical exploration revealed a multilobulated mass related to the left epididymis with involvement of the adjacent testicular tunica vaginalis. The masses, the left epididymis, and the vasa deferens with the surrounding tissue were resected. The intact testis was preserved. Final pathological diagnosis was of a benign fibrous pseudotumor of the tunica vaginalis.

Results

Ultrasound examination revealed multiple round or ovoid, well-circumscribed echogenic and hypoechoic lesions, some of which partially calcified. The location was clearly extratesticular surrounding the normal testis and presumably involving the tunica vaginalis. A posterior acoustic shadowing coming from some nodules obscuring a part of the adjacent tissue was found in all our cases. There was a moderate hydrocele in case 2.

Discussion

The term of fibrous pseudotumor of the tunica vaginalis was first introduced in 1975 by Mostofi (F.K. Mostofi et al. Atlas of Tumor Pathology. 2nd Ed; 1973: 151–154). Even though its pathogenesis is not completely understood, this lesion is considered to represent a benign reactive fibrous proliferation in response to a previous infection or trauma; 30% of patients have a history of trauma or epididymo-orchitis and 50% have a concomitant hydrocele. A non-negligible proportion of cases are probably idiopathic, such as in case 3. Although this lesion is quite uncommon, accounting for 6% of all extratesticular abnormalities, it represents the third most common benign lesion after the spermatic cord lipoma and the epididymal adenomatoid tumor. Approximately 85% of cases originate from the tunica vaginalis and the others from the epididymis, spermatic cord or the tunica albuginea.

The clinical presentation of our cases is similar to that encountered in the literature. The differential diagnosis includes some exceptional peritesticular lesions which, in contrast, presents as an isolated well-defined mass. Metastases involving the testes or the scrotum are unusual, occurring only in the context of a widely-disseminated malignancy (M.A. Jones et al. Am J Surg Pathol 1997; 21: 296–305). Most cases in the literature report a radical orchidectomy as treatment, since the diagnosis was not suspected preoperatively and the clinical presentation more suggestive of a malignant tumour. Yet, since this is a benign condition, testicular-sparing surgery with complete local resection of the masses diagnosed with a frozen section biopsy is the current treatment of choice.

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Several authors have reported the ultrasonographic appearance of this entity. However, none have confidently relied solely on the ultrasound findings without surgical exploration. Based on the 3 cases described in this paper, we found that the constant acoustic shadowing of these lesions correlates with the pathological analysis and would strongly suggest the diagnosis. In addition to demonstrating the normal appearance of the underlying testis as well as the multiple masses arising from the surrounding tissues, the presence of posterior shadowing is a finding which reflects the fibrosis (collagen) component of the masses. In addition to features previously reported (M. L. Grebenc et al. Abdom Imaging 1995; 28: 379–380), we suggest that the presence of multiple and confluent extratesticular masses associ-

This is a rare benign entity which has a characteristic pattern on US examination. The radiologist should be aware of it to orientate towards conservative surgery.

Catchwords

- This a rare benign entity which has a characteristic pattern on US examination.
- The radiologist should be aware of it to orientate towards conservative surgery.

References


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Fig. 3 Case 3, 25 yo male. a US sagittal image at the lower part of the scrotum shows multiple more or less hypoechoic masses arising from the tunica vaginalis surface, the scrotum wall (↑) and around the epididymis (↓). Note also the acoustic shadowing hiding the inferior part of the testis. b Power Doppler of one large nodule shows moderate vascularization inside a more echoic nodule (↑). c Histologic section (hematoxylin-eosin, original magnification x10) shows abundant collagen tissue with poor cellularity but without atypia, some embedded inflammatory cells.