

Case Report

Paratesticular solitary fibrous tumor: a case report and review of literature

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Abstract: Solitary fibrous tumor (SFT) is a rare spindle cell neoplasm that usually arising from the pleura, but has been reported in diverse extrapleural sites. Urogenital localization is rare, and only several cases of paratesticular SFT have been reported. In the present report, we present the case of a 61-year-old male suffering from a paratesticular SFT. A surgical excision of the lesion was performed. The tumor was well circumscribed and consisted of a mixture of bland spindle cells and dense collagen bands. Immunohistochemical studies showed positive reactivity for CD34, CD99 and vimentin, but stained negative for CD117, S100, SMA, HMB45, Desmin and CD68. All these clinicopathologic features are suggestive of the diagnosis of paratesticular SFT.

Keywords: Solitary fibrous tumor, paratesticular tumor, CD34

Introduction

Solitary fibrous tumor (SFT) is a rare spindle cell neoplasm originating from mesenchymal cells. This type of tumor usually arising from the pleura, but also occurs in various sites. SFTs are uncommon in genitourinary tract and the incidence of paratesticular SFT is particularly low. In the present case, we report the clinical and pathological characteristics of paratesticular SFT.

Case report

A 61-year-old man presented with a left scrotal mass slowly growing over 9 years. The patient showed no discomfort or local symptoms and denied any history of scrotal trauma or surgery. Physical examination of the patient revealed an oval -shaped mass of ~4.0 × 5.0 × 4.5 cm distinguishing from the left testis with no inguinal lymphadenopathy. A magnetic resonance imaging of the pelvis was performed, which revealed a paratesticular mass measuring ~4.3 × 5.1 × 4.1 cm arising from the left scrotal sac (**Figure 1**).

Testis tumor marker were evaluated and were with normal limits, human chorionic

gonadotrophin (HCG) 0.1 mIU/L, lactate dehydrogenase (LDH) 153 U/L, alpha-fetoprotein (AFP) 1.1 ng/ml. Chest X ray was negative for metastasis.

Surgical excision of the mass was undergone through a left inguinal incision. A solid, well encapsulated mass was easily enucleated with a smooth surface free of adhesions, and the ipsilateral testis and spermatic cord were well preserved. The gross specimen revealed a tan-gray, lobulated firm mass in the cut section. No necrosis and hemorrhage was noted.

Microscopically, the tumor was composed of haphazard, storiform, fascicular spindle cells. The lesion consisted of a mixture of bland spindle cells and dense collagen (**Figure 2A**). On immunohistochemical studies, the tumor cells stained positive for CD34 (**Figure 2B**), CD99 (**Figure 2C**), vimentin (**Figure 2D**) and negative for CD117, S100, SMA, HMB45, Desmin and CD68. The proliferation rate ki67 < 3%. Based on the histopathology and immunohistochemical findings, the diagnosis of a paratesticular SFT was made.

A six-month postoperative follow-up was conducted and the patient was asymptomatic with

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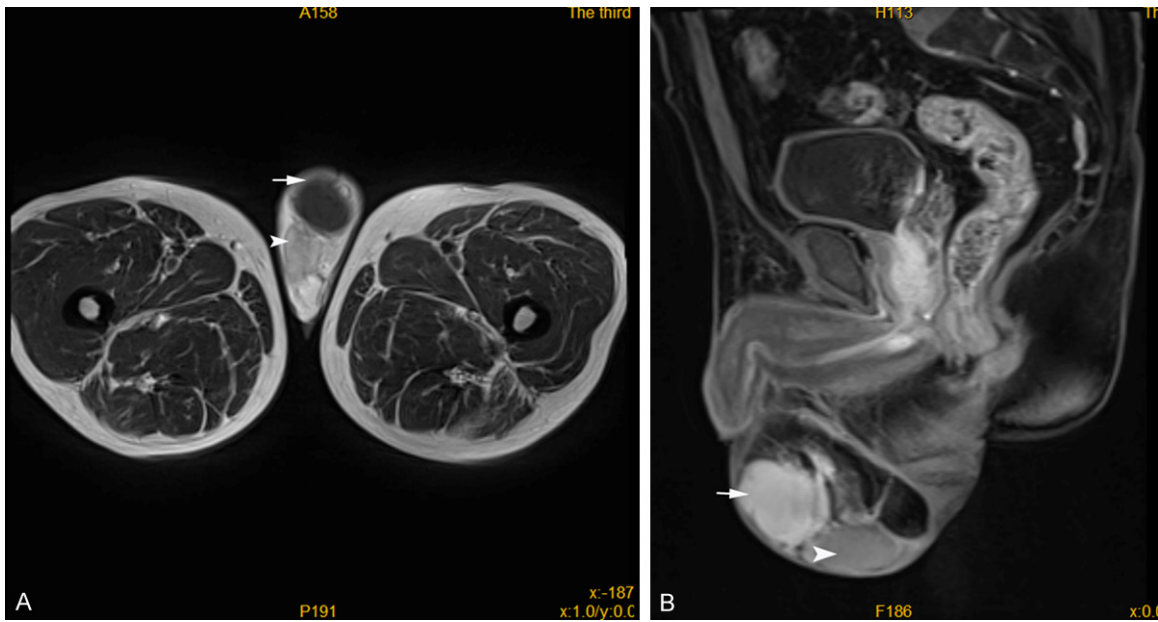


Figure 1. A. Axial magnetic resonance imaging demonstrates an oval-shaped mass (arrow) arising from the left scrotal sac close to the left testis (arrowhead). B. Sagittal section of MRI shows a paratesticular mass (arrow) and the left testis (arrowhead).

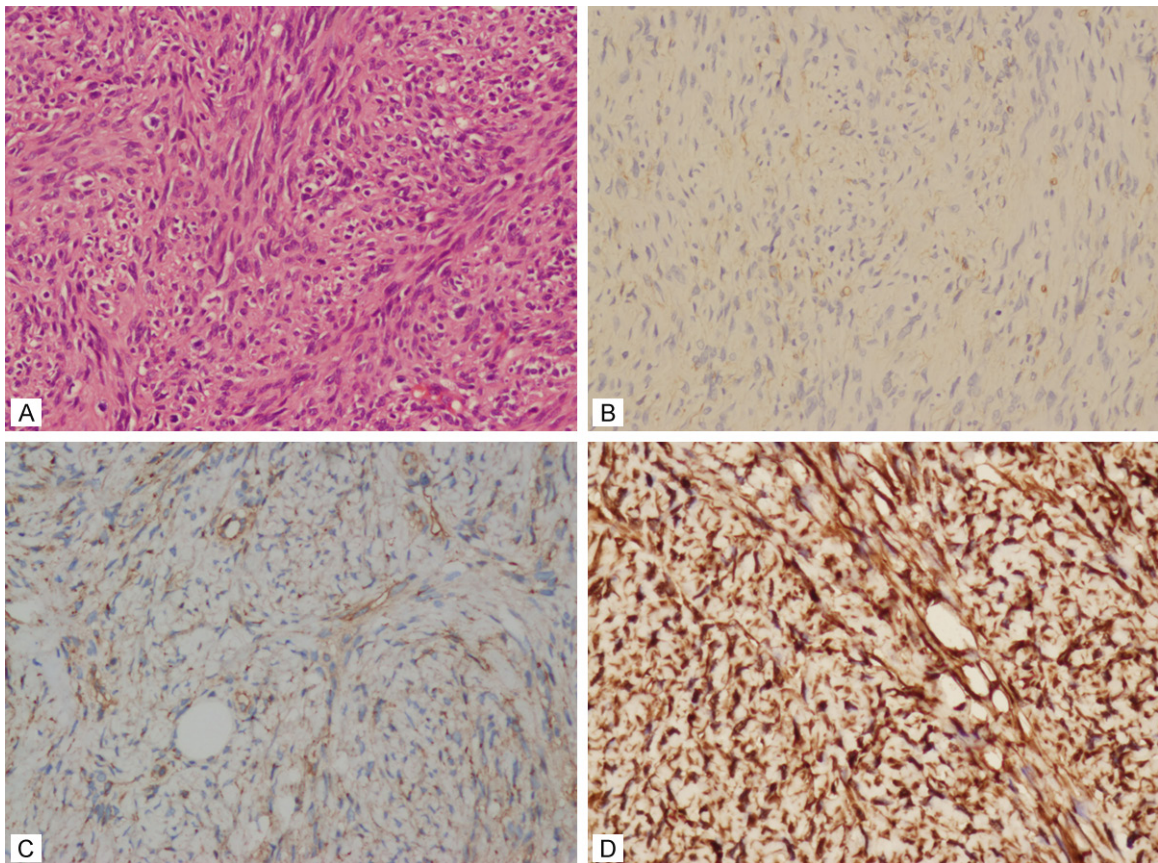


Figure 2. A. Hematoxylin and eosin stain shows the tumor was composed of haphazard, storiform, fascicular spindle cells. (magnification $\times 200$). B. Immunohistochemical staining for CD34 is positive (magnification $\times 200$). C. Immunohistochemical staining for CD99 is positive (magnification $\times 200$). D. Immunohistochemical staining for vimentin is positive (magnification $\times 200$).

Table 1. Summary of cases of paratesticular SFT

References	Age	Presentation	Side	Size	Treatment	Pathological Features
Marquez MA et al. [4]	67	Asymptomatic	UA	9 cm	Enucleation of the lesion	CD34+, vimentin+, actin-, S100-, keratin-
Xambre L et al. [5]	67	Pain	R	10 cm	Enucleation of the lesion	CD34+, vimentin+
Garcia TM et al. [6]	22	Pain	L	3 cm	Enucleation of the lesion	UA
Arrabal MA et al. [7]	44	Asymptomatic	L	5 cm	Enucleation of the lesion	CD34+, vimentin+, CD99+
Lee GE et al. [8]	61	Asymptomatic	L	5 cm	Enucleation of the lesion	CD34+
Gutierrez-Diaz CM et al. [9]	53	Asymptomatic	UA	UA	UA	CD34+, vimentin+, Bcl-2+, S100-
Barazani Y et al. [10]	26	Asymptomatic	L	6 cm	Enucleation of the lesion	CD34+, Bcl-2+, SMA-, S100-, desmin-

UA, unavailable; R, right; L, left.

no evidence of tumor recurrence. Follow-up of the patient is ongoing.

Discussion

SFT is a mesenchymal neoplasm and it was first reported in 1931 as a tumor of the pleura [1]. Though SFTs arise most frequently in the pleura, they may occur at diverse sites, including the upper respiratory tract, lung, nasal cavity, orbits, mediastinum, paranasal sinus, breast, meninges, liver and pelvic cavity [2, 3]. In genitourinary system, SFT is rarely described and the occurrence of paratesticular SFT is exceedingly rare (Table 1) [4-10].

SFT is pathologically characterized by spindle cell proliferation showing a patternless architecture. The lesion consists of alternating hypercellular and hypocellular areas, with hemangiopericytoma-like patterns in certain areas. Furthermore, the tumor is composed of bland spindle cells and collagenous bands with haphazard, storiform of fascicular arrangements.

Immunohistochemical study is a key to diagnosis and differential diagnosis. CD34 immunoreactivity has been reported to be diffusely and strongly in many cases of SFTs. Although it is a stem-cell adhesion marker, CD34 reactivity is currently regarded as the most prominent characteristic finding and a specific immune-peroxidase marker in the diagnosis of SFT [11]. Other positive immunoreactivities in SFT include CD99 and vimentin. On the contrary, SFT generally shows negative expression of S100, cytokeratin, SMA, CD117, CD31, and Desmin. These markers are useful for the differential diagnosis of SFT from other spindle cell tumors such as angiomyolipoma, leiomyoma, inflammatory myofibroblastic tumor and gastrointestinal stromal tumor. Given the histopathologic and immunohistochemical nature, the present case was consistent with the diagnosis of SFT.

As most of the SFTs are benign and well encapsulated, surgical resection is the first choice. It has been reported that 10 to 15% extrathoracic SFTs will recur or metastasize, thus strict follow-up is absolutely necessary [12]. The role of radiotherapy and chemotherapy is uncertain and further study is needed.

To summarize, we presented a case of paratesticular SFT with characteristic clinicopathological features. To our best of knowledge, the occurrence of a paratesticular SFT is exceedingly rare. The characteristic findings of imaging studies, the histological features and immunohistochemical staining for CD34, CD99 and vimentin are helpful for the diagnosis of paratesticular SFT. For the time being, surgical resection is the gold standard management and follow-up is necessary.

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Disclosure of conflict of interest

None.

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