Case Report

Leiomyoma of tunica albuginea: A case report with review of literature

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ABSTRACT

Leiomyomas are benign smooth muscle tumors that can arise from any organ, but are infrequently seen in the genitourinary tract. We present a case of a 55-year-old gentleman with a history of swelling in left testis since 6 months associated with pain. A clinical diagnosis of seminoma was made. On ultrasound, the same lesion was reported as mass with homogenous echogenicity with orchitis. However, histopathological examination revealed a diagnosis of tunica albuginea leiomyoma. Tunica albuginea leiomyomas are a rare entity. This case report highlights the awareness of tunica albuginea leiomyomas, which can be clinically mistaken for malignant testicular tumor.

Key words: Leiomyoma, mimics, tunica albuginea

INTRODUCTION

Leiomyoma is a benign tumor that arises from the smooth muscle components, harboring in any organ. Leiomyomas are commonly seen in uterus, cervix, stomach, esophagus, and genitourinary tract. Among the genitourinary tract, the renal capsule is the most common site for leiomyoma to occur,[1] but tunica albuginea leiomyomas are an extremely rare occurrence.

The first case of tunica albuginea leiomyoma was reported in the year 1972 by Albert and Mininberg.[2] Following that, only few articles have been published, owing to their importance in correctly diagnosing and differentiating them from testicular malignancies.

CASE REPORT

A 55-year-old gentleman presented to the Department of Surgery, with a history of swelling in the left side of testis since 6 months. The swelling was gradually progressive in size and associated with local scrotal pain. An ultrasound of the testis was performed, which was reported as mass with homogenous echogenicity with orchitis. In view of the swelling, surgery was performed and the mass was excised and sent to the Department of Pathology, Sri Devaraj Urs Medical College and Research Centre, Kolar, for histopathological examination.

MATERIALS AND METHODS

Macroscopy revealed a solid nonencapsulated nodular firm mass measuring 15 cm × 9.5 cm × 6.5 cm. The specimen was fixed in 10% formalin, grossed and processed. It was nonencapsulated nodular firm mass with external surface showing few congested blood vessels [Figure 1]. No capsular breach was noted. On serial slicing, homogenous gray-white solid areas with a whorled pattern were noted. Testis and epididymis were not involved.

Histopathology revealed a well-circumscribed tumor consisting of spindle cells arranged in a whorled pattern

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and fascicles. These cells had elongated nucleus with blunt ends and dispersed fine chromatin, small to inconspicuous nucleoli [Figure 2]. Focal areas showed these tumor cells arranged in a palisading pattern. Few areas of necrosis were also noted. Mitotic activity was low (2/10HPF). However, no testicular tissue was identified.

With the above microscopic findings, a differential diagnosis of (1) neural schwannoma and (2) leiomyoma was made.

Immunohistochemistry was performed using desmin and S-100 antibodies. Smooth muscle nature of tumor cells was confirmed by strong desmin positivity [Figure 3]. Hence, diagnosis of leiomyoma was confirmed.

DISCUSSION

Tunica albuginea neoplasms consist of a heterogeneous group of both benign and malignant tumors. They constitute about 15% of intra-scrotal tumors in the older age groups.[3] Cases of leiomyoma arising from tunica albuginea, tunica vaginalis testis, spermatic cord and epididymis, and body of testis have been reported.[4-6]

Extra-testicular leiomyoma is a rare tumor occurring in the male genital tract. These are second most common paratesticular tumors followed by the adenomatoid tumors. They are grouped into epididymal, spermatic cord, and scrotal tunica tumors. The histogenesis concerning leiomyoma of testis is not clear. They may arise due to the smooth muscle differentiation from myocytes in the wall of seminiferous tubules, or from myoid cells, or their progenitors present in vascular smooth muscles.

Tunica albuginea leiomyoma most often present in the older age groups, where malignancies commonly occur. These tumors do not show any predilection to the side of occurrence in testis and rarely present as bilateral swellings.[1]

After an extensive review of literature, majority of the patients presented with a painless swelling, size ranging from 0.5 cm to 10 cm in diameter. In our case, the gentleman presented with a painful swelling with size of 15 cm in diameter. Thus, we should be aware that tunica albuginea leiomyomas can present as a painful mass with large size mimicking infectious, vascular,[2,5] and malignant testicular tumors.

As the origin of leiomyoma of tunica albuginea is detected only by ultrasonography or on table at surgery, identification of origin seems a bit controversial. Chen *et al*. in an extensive review of leiomyoma found that, terms such as intra-testicular leiomyomas was used when testis was not involved and leiomyoma of tunica vaginalis or tunica albuginea was used

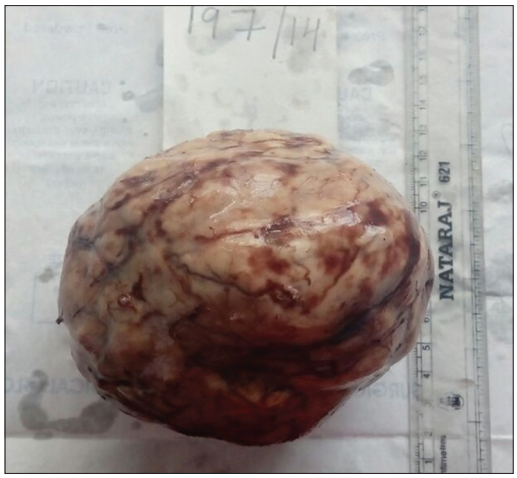

Figure 1: Large, grey-white circumscribed, nonencapsulated tumor

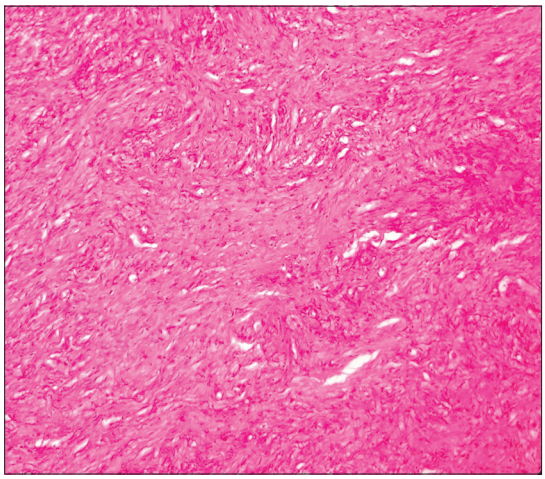

Figure 2: Well-circumscribed tumor consisting of spindle cells arranged in a whorled pattern and fascicles

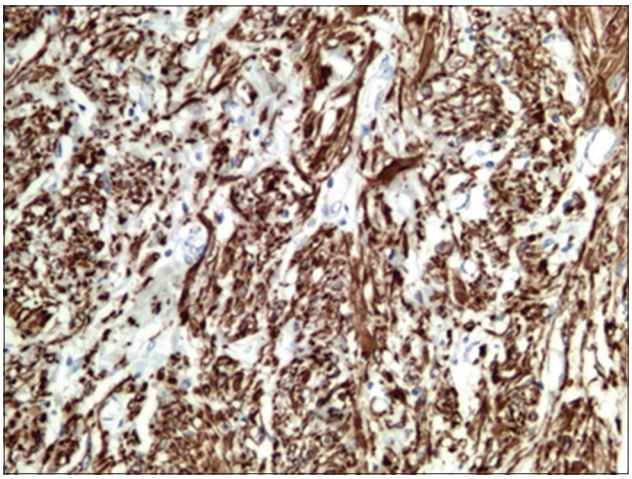

Figure 3: Smooth muscle nature of tumor cells was confirmed by strong desmin positivity

when some of the lesions involved testis.[7] Hence, he proposed a term as "testis associated leiomyoma" even though the case was of tunica albuginea origin. In his extensive review

of literature, Chen *et al*. found 41.2% of reported cases to be of tunica origin, 11.8% to be of vascular origin, 5.8% where origin was not available, and 41.2% of leiomyoma with the involvement of testicular parenchyma.[7]

Differential diagnosis for tumors arising from testicular tunics includes fibroma and inflammatory myofibroblastic tumor. Immunohistochemistry helps in the diagnosis of leiomyomas from other tumors. These stain positive for smooth muscle specific action, desmin, and caldesmon, whereas inflammatory myofibroblastic tumors are negative for desmin.

In spite of the benign nature of this entity, the treatment of choice remains orchiectomy, as clinically it cannot be distinguished from malignancy.[8] Ultrasonography may sometimes cannot differentiate paratesticular lesions from intratesticular lesions.

In the present case, as the tumor was well-circumscribed and separated from the testis during surgery, only excision was done sparing the testis. Bremmer *et al*. reported a similar case, where testis and epididymis were not removed during surgery.[9]

This case report highlights the fact that both the pathologist and the clinician should be aware of the occurrence of this rare entity of tunica albuginea leiomyoma. A testicular biopsy can aid in diagnosing between benign and malignant tumor and thereby plan accordingly the type of surgery to be undertaken. This should be distinguished from malignant tumors of testis to avoid an overdiagnosis leading to radical surgeries, thus helping in testis preservation.

CONCLUSION

Tunica albuginea leiomyoma is a rare benign tumor presenting in the older age group. It mimics infectious and malignant tumors warranting for unnecessary treatments. Therefore, tunica albuginea leiomyoma should always be kept in mind in swellings presenting as painful, large masses to avoid radical orchiectomy.

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Conflicts of interest

There are no conflicts of interest.

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