A Rare Case of Scrotal Leiomyoma Presenting as A Long-Standing Painless Swelling

M.B Rasheed[1], K. Mir[1],M. Waqas[1], A. Pervaiz[1], S. Adeel[1],V.L. Seethani[1].

[1]Shaukat Khanum Memorial Cancer Hospital and Research Centre, Department of Surgical Oncology, Lahore, Pakistan.

Abstract

Background: Leiomyomas are benign smooth muscle tumors most frequently seen in the uterus, skin, and gastrointestinal tract. Primary scrotal leiomyomas are exceedingly rare, accounting for <1% of genitourinary neoplasms. They are often misdiagnosed as sebaceous cysts or other benign scrotal lesions.

Case Presentation: We present a case of 56-year-old male presented with a 20-year history of a progressively enlarging, painless scrotal swelling. Examination revealed a hard, irregular, non-tender swelling below the testis, distinct from both testes and spermatic cords. The patient underwent complete surgical excision of a 5 × 4 cm lesion arising from the dartos muscle. Histopathology confirmed a benign leiomyoma, with spindle-shaped smooth muscle bundles without atypia or mitotic activity. The postoperative recovery was uneventful, and no recurrence was observed.

Conclusion: Scrotal leiomyomas, though rare, should be considered in the differential diagnosis of long-standing scrotal swellings. Surgical excision is both diagnostic and curative.

Keywords: Leiomyoma, Scrotum, Rare benign tumor, Surgical excision

Introduction

Leiomyomas are benign neoplasms of smooth muscle origin, most frequently occurring in the uterus, gastrointestinal tract, and skin [1]. Primary scrotal leiomyomas are extremely rare, comprising less than 1% of genitourinary tumors [2].

They are usually slow-growing, painless masses, often mistaken for common benign scrotal lesions such as sebaceous cysts, lipomas, or adenomatoid tumors [1,2].

Due to their rarity, preoperative diagnosis is challenging, and histopathology remains the gold standard for confirmation [2,3].

We present a case of scrotal leiomyoma with a 20-year history of an indolent scrotal swelling.

Case Presentation

A 56-year-old male with no comorbidities presented with a progressively enlarging, painless swelling in the left hemiscrotum for 20 years. There was no history of trauma, fever, urinary complaints, or systemic symptoms.

On examination, a firm, irregular, non-tender swelling measuring approximately 5 × 4 cm was palpable within the scrotal wall, located below the left testis and separate from both testes and spermatic cords. The overlying skin was intact, and no inguinal lymphadenopathy was noted.

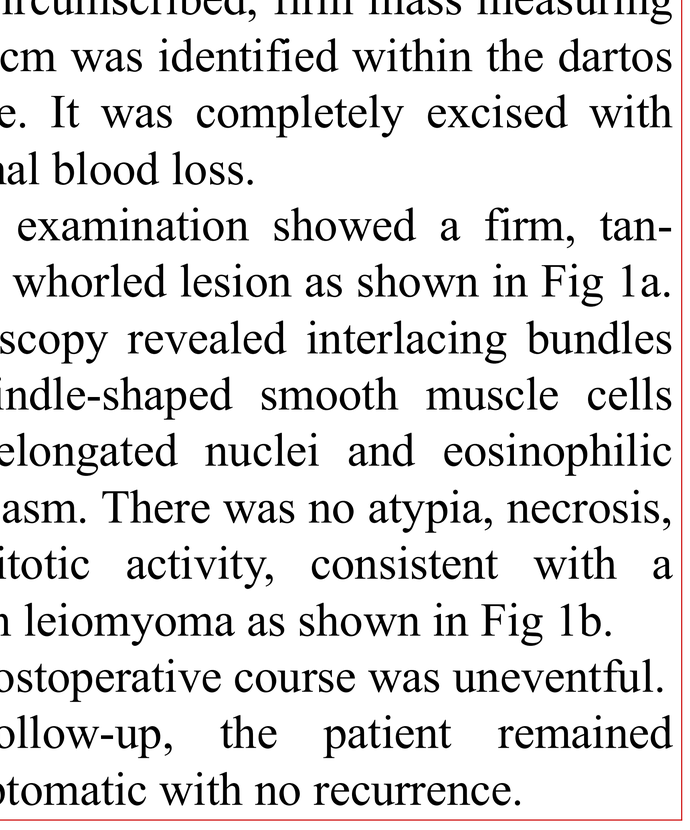
Routine blood investigations were normal.

Surgical excision was performed under general anesthesia. Intraoperatively, a well-circumscribed, firm mass measuring 5 × 4 cm was identified within the dartos muscle. It was completely excised with minimal blood loss.

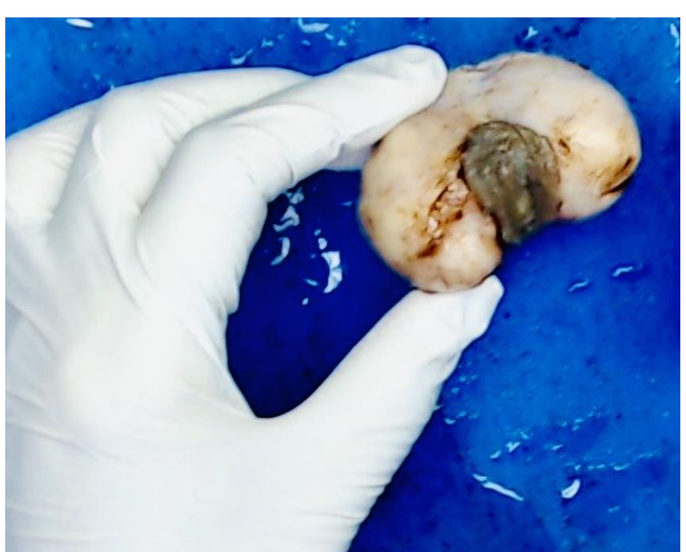
Gross examination showed a firm, tan-white, whorled lesion as shown in Fig 1a. Microscopy revealed interlacing bundles of spindle-shaped smooth muscle cells with elongated nuclei and eosinophilic cytoplasm. There was no atypia, necrosis, or mitotic activity, consistent with a benign leiomyoma as shown in Fig 1b.

The postoperative course was uneventful. At follow-up, the patient remained asymptomatic with no recurrence.

1a



1b



Discussion

Primary scrotal leiomyomas are rare, with fewer than 150 cases reported in the literature [2,4]. They most commonly originate from the dartos muscle, though they may also arise from the cremaster muscle or vascular smooth muscle [3,4].

Clinically, they present as long-standing, painless, slow-growing scrotal swellings that mimic other benign lesions [3]. Imaging, particularly ultrasonography and MRI, can suggest a solid mass but lacks specificity in distinguishing leiomyomas from other neoplasms [4]. Histopathological confirmation is therefore essential.

Leiomyomas typically demonstrate whorled bundles of spindle-shaped smooth muscle cells without nuclear atypia or mitotic activity [2,4]. The main differential diagnoses include leiomyosarcoma, fibroma, and adenomatoid tumor. Complete excision is both diagnostic and therapeutic. Recurrence is uncommon if excision is adequate [1,3].

Although malignant transformation is exceedingly rare, careful histopathological assessment is crucial. Prognosis after complete excision is excellent, and long-term follow-up is recommended.

CONCLUSION

Primary scrotal leiomyoma is an uncommon benign neoplasm that should be considered in the differential diagnosis of long-standing scrotal swellings. Surgical excision provides both definitive diagnosis and cure. Awareness of this rare entity may help avoid misdiagnosis and ensure optimal management.

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