Case Report

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Case report of a giant primary scrotal lipoma: A rare entity mimicking irreducible inguinal hernia

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Abstract

Primary scrotal lipomas of giant proportions are exceptionally rare and frequently present as an irreducible inguinoscrotal hernia leading to misdiagnosis. These lesions are often identified incidentally during surgical exploration, as in our case, posing a diagnostic dilemma. Diagnostic ambiguity associated with these swellings often results in inadequate preoperative evaluation, thereby presenting unforeseen challenges during surgery. Although scrotal exploration remains the definitive treatment, comprehensive preoperative assessment is crucial to avoid intraoperative surprises and to help the clinician provide better surgical planning and outcomes. Here, we report a case of a giant primary scrotal lipoma arising from the spermatic cord in a 47-year-old male, presenting as a painless, progressively enlarging, nontransilluminant scrotal swelling. The lesion was initially misdiagnosed as an irreducible inguinoscrotal hernia on ultrasound, highlighting the importance of adequate preoperative evaluation. In addition, we would like to emphasize the consideration of such a rare entity as the differential diagnosis of giant scrotal swellings.

Keywords:

Giant scrotal lipoma, irreducible inguinoscrotal hernia, scrotal swelling

Introduction

Scrotal swellings are a common surgical pathology seen in the outpatient department. Inguinoscrotal hernia, testicular tumors, hydrocele, epididymal cyst, and scrotal hematoma are common differential diagnoses.[1,2] Even after extensive review of the literature, there is no mention of primary scrotal lipoma as a differential diagnosis of scrotal mass, making it an exceptionally rare differential diagnosis and often confused with the common irreducible scrotal hernia. Even for the sonologist, distinguishing an irreducible hernia from a scrotal lipoma is a quandary.[3] Thus, the famous teaching of "think of the common diagnosis first" does not hold true in such cases. While ultrasonography (USG) can assist in the diagnostic process, definitive diagnosis requires histopathological confirmation following surgical excision. The exact etiology remains largely unknown, but chronic irritation or trauma is thought to be a cause of such giant swelling confined to the scrotum.[4]

Here, we present a case of giant left-sided scrotal lipoma along with bilateral incomplete direct inguinal hernias in a 47-year-old male. This case report highlights the importance of correlating clinical and radiological findings and emphasizes the need to consider rare entities such as scrotal lipoma in the differential diagnosis of inguinoscrotal masses. The procedure followed in this case was in accordance with the ethical standards of the Regional Ethical Committee (approval no. MGMC&H/IEC/JPR/2025/5049) and with the Declaration of Helsinki of 1975, as revised in 2013. In addition, all the relevant patient consent

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forms were obtained by the authors. The data supporting the findings of this case are readily available from the authors on reasonable request.

Case Report

A 47-year-old male presented to the surgical outpatient department with complaints of a progressively enlarging left-sided scrotal swelling for the past 4–5 years. The swelling was initially asymptomatic and nontender, which led the patient to ignore it. However, over time, the mass increased significantly in size, which began to cause considerable discomfort and interfered with daily activities. The nonreducible nature and continuous enlargement of the swelling prompted the patient to seek medical attention. There was no associated pain, fever, trauma, or history of similar swellings in the past. No urinary or systemic symptoms were reported. Family history was nonsignificant, and there was no any relevant surgical history.

On clinical examination, a well-defined, irreducible, nontender scrotal mass measuring approximately 15 cm was noted on the left side, inseparable from the testis and confined to the scrotum, reaching up to the superficial inguinal ring. Due to its large size, it was not possible to palpate above the swelling. Transillumination was negative. A provisional diagnosis of an irreducible inguinoscrotal hernia was made, and the patient was advised to undergo USG of the scrotum. USG revealed a left-sided irreducible inguinoscrotal hernia with a smaller right-sided hernia. All hematological and biochemical parameters were within normal limits and serological profile (human immunodeficiency virus/hepatitis B surface antigen/hepatitis C virus) was negative. The patient was optimized and planned for bilateral mesh hernioplasty after taking proper informed consent.

Intraoperatively, via an inguinal approach, cord structures were identified. No indirect sac was found; however, a small direct hernia was present. Therefore, intraoperatively, it was planned to deliver the testis into the inguinal canal. The left testis was delivered into the inguinal wound, and alongside it, a well-encapsulated, oval, lipomatous mass measuring approximately 18 cm × 12 cm was identified. The mass was separate from the testis and cord structures but appeared to derive its blood supply from the external spermatic vessels [Figure 1A and B].

Following ligation of its vascular supply, the well-encapsulated lipomatous mass was excised [Figure 2A and B]. The patient subsequently underwent routine bilateral onlay mesh hernioplasty. Histopathological examination confirmed a benign lipoma measuring 18 cm × 12 cm × 7 cm, with thin internal septations and no evidence of necrosis. The postoperative course was uneventful. The patient was discharged on postoperative day 2 and reviewed on day 10 without complications.

Discussion

Scrotal lipoma is an extremely rare clinical entity and is often misdiagnosed preoperatively as more common scrotal pathologies such as inguinoscrotal hernia, hydrocele, testicular tumors, epididymal cysts, or

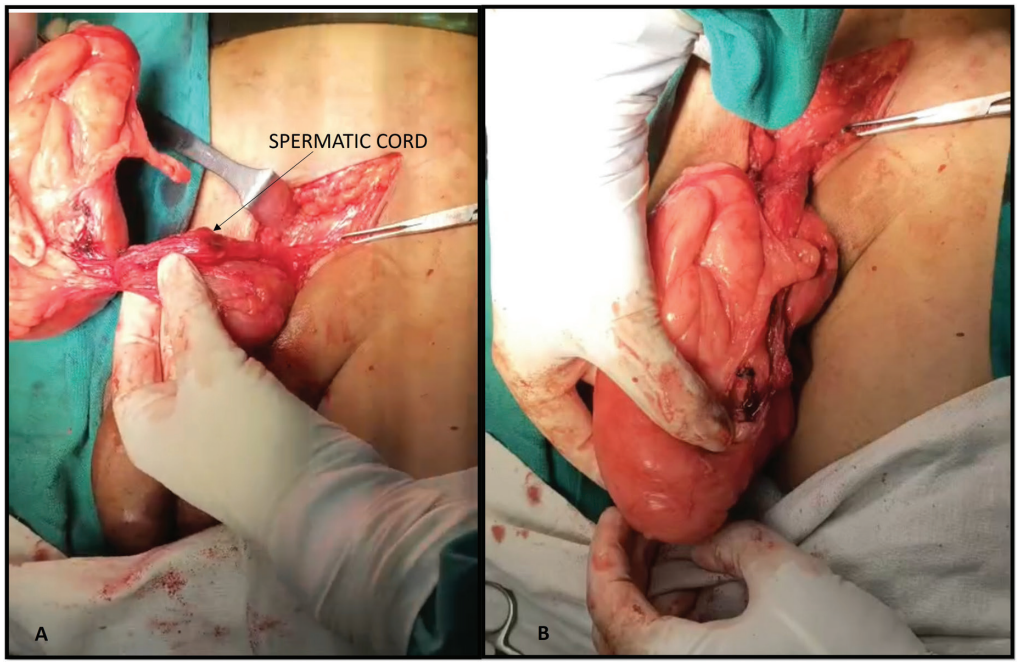


Figure 1: Intraoperative images showing (A) the lipoma in relation to the cord structures and testis, and (B) its vascular supply from the external spermatic vessels

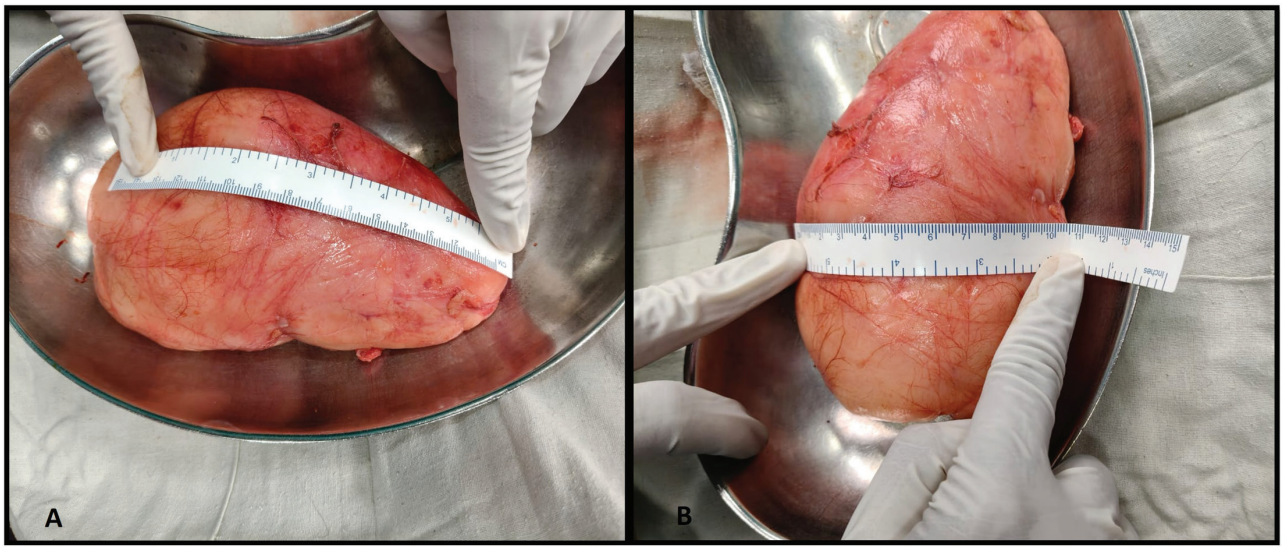


Figure 2: (A) Gross specimen of the excised lipoma measuring 18 × 12 × 7 cm. (B) Cut section showing thin internal septations with no evidence of necrosis

testicular torsion.[5] Giant scrotal lipomas are even rarer, with very few cases documented in the literature. This case represents one of the largest scrotal lipomas reported to date, arising from the scrotal part of the spermatic cord.[6]

Diagnosing primary scrotal lipoma preoperatively remains a clinical challenge due to the relative rarity of the condition, the presence of more common differential entities, and the complex anatomy of the scrotal region.[7,8] Clinically, such swelling may imitate inguinal hernias, as in this case.[9] In most cases, USG is the primary imaging modality used, and further radiological investigations are typically unnecessary if USG findings are conclusive—as was observed in this case. This often results in an intraoperative surprise for the surgical team when the true nature of the swelling is revealed.

Scrotal lipomas may originate from one of three anatomical regions: (1) adipose tissue posterior to the spermatic cord; (2) the spermatic cord itself; (3) the scrotal wall.[10] Scrotal lipomas are generally categorized based on their site of origin, as described by Florante *et al*.[11] [Table 1]. This categorization holds little clinical significance in terms of prognosis or treatment, as all such tumors ultimately require complete surgical excision. However, intratesticular or intramuscular variants of scrotal lipoma may carry a higher risk of recurrence.[7]

Scrotal lipomas have been documented since the time of Hippocrates, indicating a long history of recognition.[6] Despite this, only a limited number of cases have been reported and published to date, highlighting the rarity of this condition. Hence, we propose that clinicians maintain a high index of suspicion when evaluating cases of giant scrotal swellings. Primary scrotal lipoma should be included in the differential diagnosis

Table 1: Classification of scrotal lipomas based on the site of origin[11]

A. Paratesticular	B. Extratesticular
(1) Spermatic cord	(1) Preperitoneal, preperitoneal, or subperitoneal fat herniation
(2) Epididymis	(2) Subserous fat around the inguinal ring
(3) Tunica vaginalis	(3) Fasciae and transversalis muscle of the perineal area
(4)Testicle	(4) Perineum
	(5) Isolated fat lobules from subcutaneous tissues of the scrotal wall

in any case of painless, progressively enlarging, nontransilluminant scrotal swelling. USG remains the first-line imaging modality due to its accessibility and diagnostic utility, especially in resource-limited settings.[12] However, in cases of large or atypical scrotal masses, magnetic resonance imaging (MRI) can be considered to better delineate the lesion and distinguish lipoma from other potential diagnoses, especially to rule out more serious pathologies such as liposarcoma that accounts for 3%–7% of all extratesticular scrotal masses.[13] In addition, given the significant size of the scrotal mass, preoperative MRI can suggest potential tumor heterogeneity, infiltration, or enveloping other scrotal structures, raising the possibility of sarcomatous degeneration.[14,15] However, it is difficult to distinguish low-grade liposarcoma from benign lipoma based on MRI findings.[16] Thus, preoperative MRI, combined with postoperative histopathology, is the only way to provide a definitive diagnosis in such giant scrotal lipomas.[17]

Conclusion

Only few cases of giant scrotal lipoma have been documented to date. Based on our literature review,

this case appears to be among the largest reported primary scrotal lipomas, specifically originating from the scrotal portion of the spermatic cord. This case report highlights the need to consider giant scrotal lipoma as a differential diagnosis in patients presenting with scrotal swellings. In this context, while preoperative scrotal MRI has shown promise in the diagnostic workup of such cases, its routine inclusion warrants further investigation and multidisciplinary consensus, particularly given the current lack of standardized protocols.

Author contributions

SM: Operating surgeon, concept and design, acquisition of data, drafting of manuscript, and critical review of manuscript. AM: Drafting of manuscript, and ethical clearance.

Ethical policy and Institutional Review Board statement

The study was approved by the Institutional Ethics Committee (no. MGMC&H/IEC/JPR/2025/5049).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given consent for the images and other clinical information to be reported in the journal. The patient understands that the name and initials will not be published, and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Data availability statement

The data supporting the findings of this study are readily available from the authors on reasonable request.

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Conflicts of interest

There are no conflicts of interest.

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