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Benign Fibrolipoma Of The Scrotal Region: A Rare Case Report

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Abstract
Background: *Fibrolipoma is a rare benign mesenchymal tumor composed of mature adipose tissue admixed with fibrous connective tissue. Although lipomas are common soft-tissue tumors, scrotal involvement is exceptionally uncommon and often poses diagnostic challenges due to its resemblance to other scrotal pathologies.*
Case Presentation: *A 33-year-old male presented with a painless, progressively enlarging scrotal swelling of two years' duration. The mass increased from 2 × 2 cm to 15 × 8 cm, leading to difficulty in walking, sitting, and maintaining hygiene. Clinical examination revealed a large, pedunculated scrotal mass without tenderness or discharge. Laboratory parameters were within normal limits. Ultrasonography demonstrated a multilobulated, exophytic soft-tissue mass with internal vascularity, raising suspicion of neoplastic pathology. Differential diagnoses included giant condyloma acuminatum and Buschke–Lowenstein tumor. Complete surgical excision was performed under spinal anesthesia.*
Results: *Gross examination revealed a 15 × 10 × 5 cm skin-tag specimen containing fibrous and fatty tissue. Histopathological evaluation showed stratified squamous epithelium with hyperkeratosis and papillomatosis, along with mature adipocytes interspersed with collagen fibers and mild chronic inflammatory infiltrates. No dysplasia or malignancy was identified, confirming the diagnosis of benign fibrolipoma. The postoperative course was uneventful.*
Conclusion: *Scrotal fibrolipoma is a rare benign entity that can mimic more common or malignant scrotal conditions. Clinical and radiological findings alone may be inconclusive, making histopathological examination essential for definitive diagnosis. Complete surgical excision remains both diagnostic and curative, with excellent prognosis and minimal risk of recurrence.*
Keywords: *Scrotal fibrolipoma, Benign scrotal tumor, Giant scrotal swelling*

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I. Introduction

Fibrolipomas are rare benign mesenchymal tumors composed of mature adipose tissue admixed with fibrous connective tissue [1]. Although lipomas are among the most common soft-tissue tumors, their occurrence in the scrotal region is exceptionally uncommon, often resulting in diagnostic uncertainty [2,3]. Scrotal fibrolipomas may arise from adipose tissue or the spermatic cord and extend into the scrotum, though their precise origin is frequently indeterminate [4]. Owing to their rarity, these tumors are not routinely included in the initial differential diagnosis of scrotal masses, which may delay definitive treatment and increase patient distress [2].

The evaluation of scrotal masses remains challenging due to the wide range of possible etiologies, encompassing benign inflammatory conditions, cystic lesions, and malignant neoplasms [2]. Clinically, fibrolipomas can closely mimic more common entities such as inguinoscrotal hernia, hydrocele, varicocele, or testicular tumors, making accurate diagnosis difficult on clinical and radiological grounds alone [2,5]. Consequently, definitive diagnosis relies on histopathological examination following surgical excision [2]. This case report presents a rare instance of benign fibrolipoma of the scrotal region in a 33-year-old male, detailing the clinical features, diagnostic approach, surgical management, and histopathological findings, and aims to contribute to the limited literature on this uncommon condition.

II. Case Report

A 33-year-old male presented with a progressively enlarging, painless swelling in the scrotal region over a two-year period. Initially, the swelling measured approximately 2 × 2 cm, but it gradually increased to a substantial size of 15 × 8 cm (Figure 1A and 1B). This considerable enlargement led to significant functional impairment, causing difficulty in walking, sitting, and maintaining personal hygiene. Clinical examination revealed a deformed scrotal shape due to the mass, but no associated pain, discharge, or skin changes were noted. There was no history of similar complaints, known comorbidities, previous surgical interventions, blood thinner intake, or blood transfusions.

Laboratory investigations revealed no significant abnormalities, with hematological parameters, renal and liver function tests, and serum electrolyte levels within normal limits. Scrotal ultrasonography (USG) revealed a large, ill-defined, multilobulated, pedunculated, and exophytic soft tissue mass located along the anterolateral and posterior aspects of the scrotal wall. Color Doppler imaging indicated internal vascularity, suggesting a neoplastic etiology. Initial differential diagnoses included giant condyloma acuminatum and Buschke–Lowenstein tumor. The patient underwent excision and biopsy of the scrotal swelling under spinal anesthesia. The intraoperative diagnosis was noted as scrotal swelling, with a differential possibility of lipoleiomyoma. Postoperatively, the patient remained conscious and oriented, with a healthy suture site and no active discharge. The overall condition was satisfactory.

Histopathological examination of the excised specimen confirmed the diagnosis. Gross description noted a single skin-tag specimen measuring 15 × 10 × 5 cm, with a skin flap of 15 × 4.5 cm (Figure 1C). Serial sectioning revealed fibrous tissue and fatty tissue. Microscopic examination showed tissue lined by stratified squamous epithelium with focal hyperkeratosis and parakeratosis with papillomatosis (Figure 1D). Crucially, sections from the fatty area demonstrated a proliferation of mature adipocytes along with collagen fibers, and focal mild subepithelial chronic inflammatory infiltrates (Figure 1E). There was no evidence of dysplasia or malignancy, leading to a final diagnosis of benign fibrolipoma.

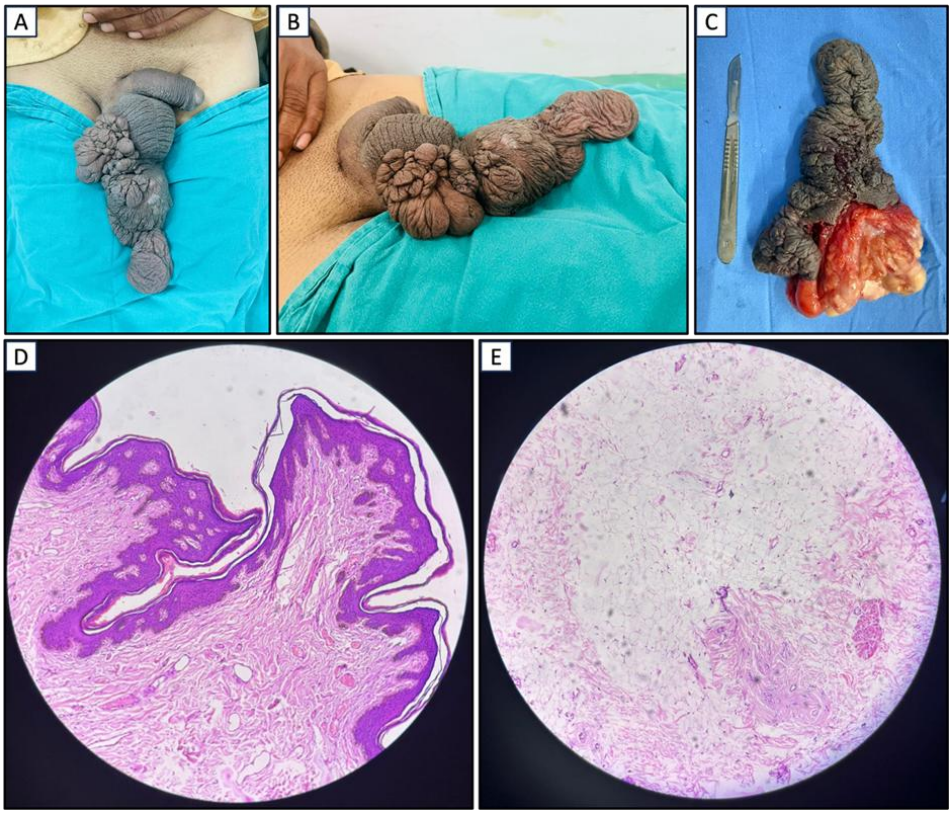

Figure 1: Clinical and histopathological features of scrotal fibrolipoma. (A and B) Enlargement of the scrotal region at the time of admission. (C) Excised skin-tag mass with attached skin flap. (D) Histopathological section demonstrating stratified squamous epithelium with focal hyperkeratosis, parakeratosis, and papillomatosis. (E) Fatty areas showing mature adipocytes interspersed with collagen fibers and focal mild subepithelial chronic inflammatory infiltrates.

III. Discussion

Fibrolipoma is a rare benign tumor made of fat and fibrous tissue. While lipomas are common, they rarely occur in the scrotum, making diagnosis difficult. Large scrotal fibrolipomas typically present as painless, progressively enlarging masses and can cause significant morbidity by impairing mobility, sitting, and personal hygiene. In this case, the growing mass and vascularity seen by Doppler ultrasound raised concern for neoplasia, underscoring the diagnostic challenges of scrotal tumors. The differential diagnosis of scrotal masses is broad and includes inguinal hernia, hydrocele, spermatocele, epididymal cysts, inflammatory lesions, benign and malignant tumors. Primary scrotal lipomas, although rare, have been reported and are frequently misdiagnosed as hernias or testicular malignancies due to their size and presentation [2,3]. Even rarer are fibrolipomas arising from the spermatic cord, particularly described in pediatric populations [5].

USG remains a cornerstone of initial assessment and, in this patient, revealed a multilobulated, pedunculated, exophytic soft-tissue mass with internal vascularity, prompting concern for a neoplastic etiology. However, radiological differentiation between benign and malignant lipomatous tumors is often challenging. Benign entities such as lipoblastoma may mimic atypical lipomas on imaging [6], while malignant tumors such as myxofibrosarcoma have also been reported to present as scrotal swellings [7]. Definitive diagnosis in this case was established by histopathological examination, which demonstrated mature adipocytes interspersed with collagen fibers without evidence of dysplasia or malignancy, consistent with the characteristic microscopic features of fibrolipoma [1]. Differentiation from well-differentiated liposarcoma can be difficult in large or infiltrative lesions, necessitating careful histological evaluation; however, the absence of atypical lipoblasts and malignant features confirmed the benign nature of the tumor in this instance.

Surgical excision remains the treatment of choice for symptomatic scrotal fibrolipomas. Complete removal is generally curative, with a low risk of recurrence [5]. In addition to symptom relief, surgical management allows for comprehensive histopathological assessment, which is essential for excluding malignancy. This case contributes to the limited literature on large scrotal fibrolipomas and underscores the importance of maintaining a broad differential diagnosis, utilizing a comprehensive diagnostic approach, and relying on histopathology for accurate diagnosis and optimal patient management in such rare presentations.

IV. Conclusion

Benign fibrolipoma of the scrotal region is a rare and often overlooked entity that can convincingly masquerade as more common or even malignant scrotal pathology. This case highlights how an indolent, painless mass may silently enlarge over time, ultimately causing marked functional impairment and significant patient distress. The diagnostic ambiguity surrounding such presentations reinforces the limitations of clinical and radiological assessment alone and underscores the indispensable role of histopathology in establishing certainty. Timely and complete surgical excision not only restores function but also provides definitive diagnosis and cure, reaffirming the importance of maintaining awareness of rare benign tumors in the evaluation of scrotal masses.

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