CASE REPORT

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Paratesticular Well-differentiated Liposarcoma: A Case Report

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ABSTRACT

Paratesticular liposarcoma is an extremely rare malignant tumor that often mimics inguinal hernia or benign scrotal masses. A 52-year-old man presented with a painless left inguinal swelling initially suspected to be an inguinal hernia. Imaging studies revealed a 6 cm lipomatous lesion extending into the scrotum. During surgery, a paratesticular mass distinct from the hernia sac was identified and excised. Histopathological examination confirmed a well-differentiated liposarcoma with close surgical margins, leading to a subsequent radical orchiectomy. The final pathology showed no residual malignancy. The patient remains disease-free during follow-up without adjuvant therapy. This case emphasizes the diagnostic challenge of paratesticular liposarcomas and the importance of surgical margin assessment to prevent recurrence.

Keywords: Inguinal hernia; liposarcoma, surgery; testicular neoplasm; well-differentiated

INTRODUCTION

Genitourinary system sarcomas constitute approximately 2% of urologic tumors. The spermatic cord is the most commonly involved urologic region among such conditions.[1,2] Paratesticular liposarcoma constitutes 3-7% of paratesticular sarcomas.[1] Most of them are well differentiated. Patients present with a painless, irregular, slowly growing mass. The findings are frequently confused with inguinal hernia. It is extremely difficult to diagnose paratesticular liposarcomas before surgery. The diagnosis is usually made by histopathologic examination.[2] We present a case where an inguinal hernia was operated on, and a left paratesticular liposarcoma was found during the operation.

CASE PRESENTATION

A 52-year-old male patient presented to the urology outpatient clinic with a painless mass in the left testicle. He reported no history of trauma, prior surgery, radiation exposure, or chronic infection. There was no family history of sarcoma or similar soft-tissue tumors, and he denied any occupational or environmental exposure to carcinogenic agents. The swelling had been gradually increasing in size over the previous eight months. On physical examination, both testicles were found to be within normal limits in the scrotum. A mass was noted in the left inguinal area extending towards the scrotal region, suggesting an inguinal hernia. Ultrasonography revealed a solid structure measuring approximately 6x5.8 cm extending into the scrotal area in the left inguinal region. It was difficult to differentiate whether this was a lipomatous mass or adipose tissue herniation. Non-contrast abdominal computed tomography (CT) demonstrated a lipomatous inguinal hernia measuring approximately 6x6 cm in the left scrotal area (Figure 1). Testicular tumor markers (alpha-fetoprotein, lactate dehydrogenase, and beta-human chorionic gonadotropin) were within normal limits.

During surgery for inguinal hernia, a mass lesion was discovered in the left paratesticular region. After dissection of the hernia sac, an excisional biopsy was performed. The macroscopic appearance of the mass during the operation

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is shown in Figure 2. The pathology report indicated a well-differentiated liposarcoma. The lesion exhibited multinodular growth, with nodules ranging from 2 cm to 5 cm in diameter. The total size was 14.5x11x4.5 cm. Immunohistochemistry showed focal CDK-4 positivity, sparse nuclear MDM-2 expression, and positive p16 and CD34 staining. The mitotic count was 1, differentiation was 1, necrosis was 0, and the lesion was graded as 1 according to Fédération Nationale des Centres de Lutte Contre le Cancer. The lesion was observed to be located less than 1 mm from the surgical margins (Figure 3).

Due to the narrow surgical margins, a left radical orchiectomy was performed. The pathology result of the orchiectomy specimen was reported as chronic inflammatory granulation tissue. The patient has been monitored without further treatment. Informed consent was obtained from the patient.

DISCUSSION

Paratesticular tumors are rare entities, accounting for approximately 7-10% of all intrascrotal neoplasms, and most originate from the spermatic cord, epididymis, or testicular tunics.[1,2] Among these, sarcomas comprise about one-third; liposarcomas represent only 3-7% of paratesticular sarcomas, making them exceedingly uncommon.[3] Well-differentiated liposarcoma is the most frequent histological subtype, characterized by indolent progression, local aggressiveness, and a low metastatic potential.[4-10]

Paratesticular liposarcoma typically affects men between the fifth and seventh decades of life.[5,10] While most cases are sporadic, some reports have suggested possible associations with prior trauma, radiation exposure, chronic inflammation, or genetic susceptibility, though no consistent etiologic factor

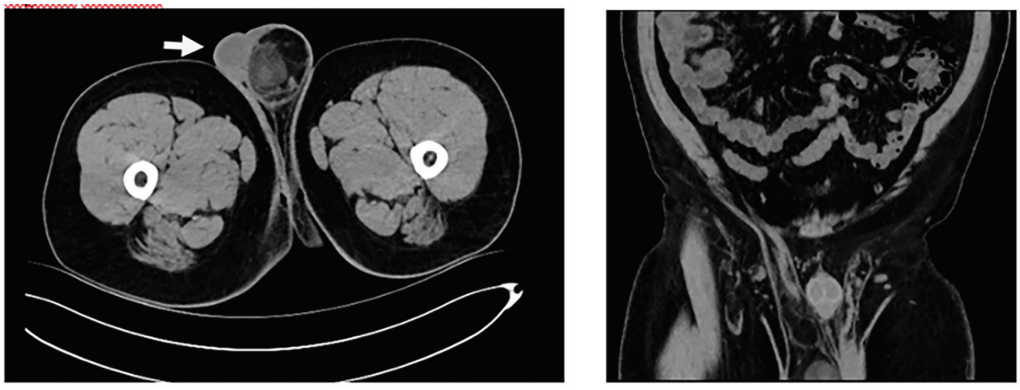

FIGURE 1. Computed tomography images of the mass in the left inguinal region extending towards the scrotal area in axial and sagittal sections.

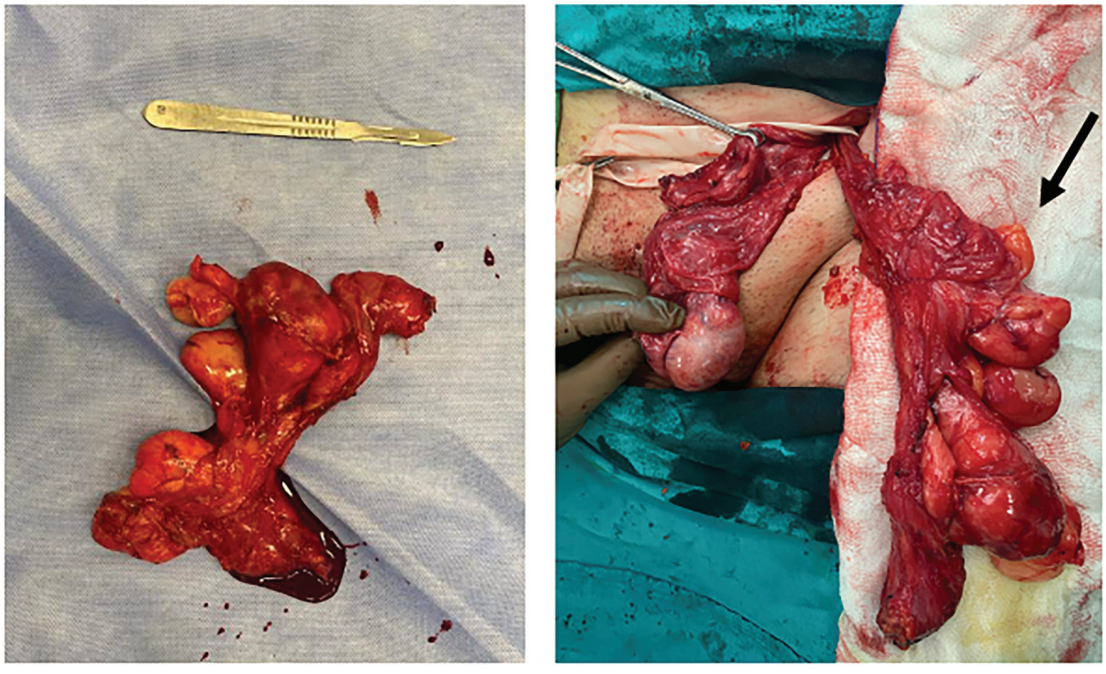

FIGURE 2. The macroscopic appearance of the dissection material from the left paratesticular region was examined.

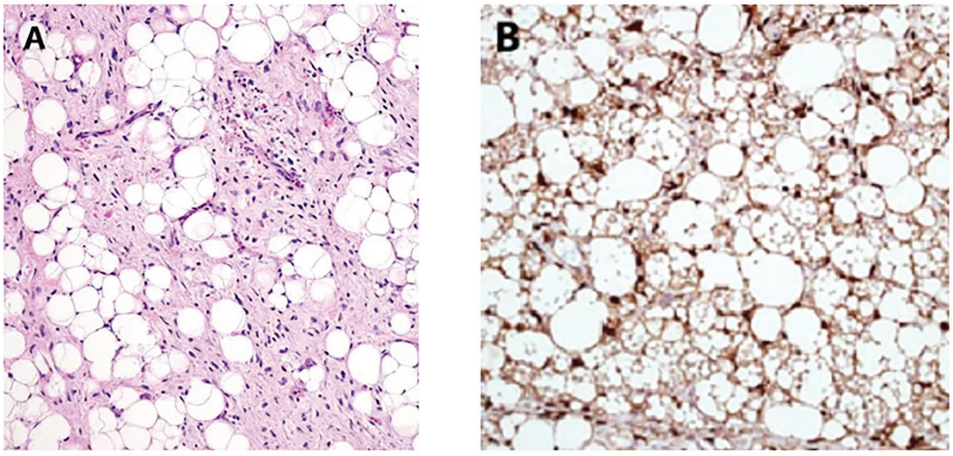

FIGURE 3. A: Well-differentiated parateticular liposarcoma with sclerotic areas and hyperchromatic, irregular, spindle cells with enlarged nuclei. (hematoxylin and eosinx200) B: Nuclear p16 positive tumor cells (anti p16 antibodyx100).

has been confirmed.[6,11] In our case, the patient had no history of trauma, surgery, radiation, or familial predisposition, consistent with the majority of previously reported series.[12-14]

Clinically, patients usually present with a slowly enlarging painless inguinoscrotal mass which is often misinterpreted as a benign condition such as inguinal hernia, lipoma, or hydrocele.[7,8] Because of its soft and mobile consistency, the lesion may mimic herniated fat, as seen in our patient. These overlapping features frequently delay diagnosis and emphasize the need for clinical suspicion, particularly in older men with atypical or persistent scrotal swelling.[9,13] Imaging with ultrasonography is typically the first-line diagnostic tool, but its sensitivity in differentiating benign from malignant lipomatous lesions is limited. CT or magnetic resonance imaging can better define the lesion's extent, composition, and relation to adjacent structures, although definitive diagnosis depends on histopathological and immunohistochemical analysis. The expression of MDM2, CDK4, and p16 supports the diagnosis of well-differentiated liposarcoma, as observed in our patient.[10,13]

Complete surgical excision with negative margins remains the cornerstone of management and the single most important prognostic factor.[2,10,12] When the tumor involves or closely abuts the spermatic cord or testis, radical orchiectomy with high cord ligation is recommended to achieve adequate clearance.[4,10] In our case, a second radical orchiectomy was performed after the first excision revealed a margin of less than 1 mm, and the subsequent specimen was free of tumor. Achieving negative margins minimizes the risk of local recurrence, which remains the most frequent pattern of failure.[11,12]

The role of adjuvant therapy in paratesticular liposarcoma is controversial. According to recent European Society for Medical Oncology-European Reference Network for Rare Adult Solid Cancers-European Reference Network for Genetic Tumour Risk Syndromes guidelines, adjuvant radiotherapy may be considered for positive margins, high-grade disease, or recurrent tumors, while chemotherapy is generally reserved for dedifferentiated or metastatic cases.[11] However, in well-differentiated liposarcoma, the impact of radiotherapy on survival is limited. Recent studies have shown that margin-negative resection alone provides excellent local control without the need for additional therapy.[10,12,14] Given the low-grade histology and complete excision in our patient, no adjuvant treatment was indicated.

Because recurrence can occur even years after primary resection, long-term surveillance is essential.[3,13,15] Follow-up should include physical examination and imaging every 6-12 months during the first three years and annually thereafter, as most recurrences develop within two years of surgery.[12,15] Cross-sectional imaging of the pelvis and abdomen is particularly important for early detection of local relapse.

Prognosis is largely determined by tumor grade, size, histologic subtype, and surgical margin status.[7,12,13] Well-differentiated histology, tumor size smaller than 10 cm, and negative margins are associated with excellent outcomes, whereas dedifferentiation or incomplete resection markedly increases recurrence risk.[10,11,14] Our patient, who remains disease-free 18 months after surgery, exemplifies the favorable prognosis achievable with early diagnosis, adequate surgical management, and vigilant postoperative follow-up.

CONCLUSION

Paratesticular liposarcoma is an exceptionally rare tumor that often mimics benign scrotal or inguinal conditions, leading to delayed diagnosis. Awareness of this entity and early

recognition are essential to avoid misdiagnosis and ensure timely surgical intervention. Complete surgical excision with clear margins remains the cornerstone of treatment and offers the best chance for cure. Given the potential for local recurrence even years after surgery, careful and long-term follow-up is indispensable. Our case highlights that meticulous surgical management combined with vigilant postoperative surveillance can achieve excellent outcomes in these rare malignancies.

Ethics

Informed Consent: Informed consent was obtained from the patient.

Footnotes

Authorship Contributions

Surgical and Medical Practices: E.B.E., Concept: E.B.E., F.E., Design: E.B.E., B.Ç., F.E., A.P.E., M.Ş., Data Collection or Processing: E.B.E., Analysis or Interpretation: E.B.E., Literature Search: E.B.E., A.P.E., M.Ş., Writing: E.B.E., B.Ç., F.E.

Conflict of Interest: No conflict of interest was declared by the authors.

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