CASE REPORT CRSLS

Scrotal Liposarcoma

Ricardo J. Fraticelli-Rosado, MD, Maria R. Cochran-Perez, MD, Gilberto Ruiz-Deya, MD, Limael Rodriguez Vega, MD

Department of Surgery, Hospital Episcopal San Lucas, Ponce, Puerto Rico, USA (Drs Fraticelli-Rosado, Ruiz-Deya, and Rodriguez Vega).

Transitional Residency Program, Hospital Damas, Ponce, Puerto Rico, USA (Dr. Cochran-Perez).

Ponce Health Sciences University, Ponce, Puerto Rico, USA (Dr. Ruiz-Deya).

ABSTRACT

Introduction: Scrotal liposarcoma is a very rare scrotal malignancy that is a diagnostic and therapeutic challenge for the treating surgeon.

Case description: A 47-year-old man presented with a recent onset of bilateral testicular swelling and increasing discomfort. The patient had undergone an uneventful laparoscopic bilateral inguinal hernia repair 6 months prior and had been symptom free at 1 month after surgery. Now, the patient had developed recurrent swelling of his right scrotal area and nocturia. A computed tomographic scan revealed a lipomatous mass extending into the inguinal canal, and a decision was made to explore and resect the mass via a laparoscopic approach. Exploration revealed a large fatty mass extending from the inguinal canal to the retropubic space. After careful dissection of the mass off the inguinal vessels, it was pushed into the inguinal canal for later removal through the scrotum. The inguinal defect was covered with an absorbable mesh via laparoscope, and the dissection and transscrotal removal of the fatty mass was completed. Pathology revealed scrotal liposarcoma. At the 4-month follow-up, the patient was asymptomatic and a computed tomographic scan revealed no masses or signs of recurrence. At the 1-year follow-up, the patient remained disease free.

Conclusion: This case demonstrates an uncommon scrotal malignancy. Open surgery with orchiectomy is the surgical technique that most surgeons use. We have demonstrated that a laparoscopic approach is a viable alternative that can provide negative margins and testicular preservation.

Key Words: Laparoscopy, Orchiectomy, Scrotal liposarcoma, Scrotal mass.

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Address correspondence to: Ricardo J. Fraticelli-Rosado, MD, Department of Surgery, Hospital Episcopal San Lucas, 917 Avenue Tito Castro, Ponce, PR 00732, USA. Fax: 787-841-7165, Telephone: 939-640-3747, E-mail: rjfraticelli@gmail.com

INTRODUCTION

Scrotal liposarcomas are a rare cause of scrotal mass. About 7% of paratesticular malignancies arise from the spermatic cord and are thought to originate in the mesenchymal tissue.[1,2] Most malignant paratesticular tumors are sarcomas, and about 5–7% are liposarcomas.[2] Around 20% of liposarcomas originate from the retroperitoneum, and only 0.1% present as an apparent inguinal hernia.[3] Most are a slowly growing inguinal mass below the external inguinal ring that can be confused with an inguinal

hernia, making accurate preoperative diagnosis uncommon. No clear surgical approach is recommended, but many surgeons opt for scrotal exploration and high radical orchiectomy because of the risk of recurrence and the better chance of obtaining negative surgical margins.[2–4] We describe a case treated with a combined laparoscopic and open approach that preserved the testicle and obtained negative margins. Written consent to publish was provided by the patient and archived.

CASE DESCRIPTION

A 47-year-old man who had undergone laparoscopic bilateral inguinal hernia repair 6 months earlier presented with new-onset testicular swelling and discomfort. He reported lower urinary tract symptoms including nocturia and right scrotal swelling. On physical examination, a large recurrent right inguinal mass was noted. He denied infectious symptoms, trauma, weight loss, or any other symptoms. He had no personal or family history of malignancy. Review of his chart showed that the perioperative course had been completely uneventful, and at 2-month follow-up he had been free of symptoms. Physical examination before the index case was suggestive of bilateral inguinal hernias, with the larger one on the right side. The preoperative computed tomographic (CT) scan confirmed the presence of the hernias, and no other soft tissue masses were noted (unfortunately, the films are not available).

A pelvic CT scan was ordered and revealed a large right inguinal/scrotal lipomatous tissue mass (**Figures 1** and **2**), which was concerning for hernia recurrence. Results of a complete blood count, basic metabolic panel, urine culture, and urinalysis were within normal limits. The decision was made to re-explore the hernia repair via a laparoscopic approach, and a large right lipomatous inguinal mass was found. The mass extended out of the inguinal canal into the retropubic space and anterior to the inguinal vessels. Intraoperative frozen section biopsy suggested liposarcoma (**Figure 3**). Dissection was performed, and the entire fatty mass was dissected off the vessels and pushed into the inguinal canal. The hernia defect was repaired with mesh via a laparoscopic technique, and the procedure was then converted to complete the mass dissection and excision via an open transscrotal incision. The appearance of the fatty tissue and the relatively fast growth of the mass were highly suspicious for malignancy (**Figure 4**).

Postoperative diagnosis was a right scrotal lipoma, with 4 piecemeal segments measuring, in aggregate, 21 × 15.8 × 4.7 cm and weighing 668 g. The external surface of each segment was lobulated and covered by a purplish-tan fibromembranous soft tissue. After serial sectioning of the specimens, a well-circumscribed area of firm, homogeneous,

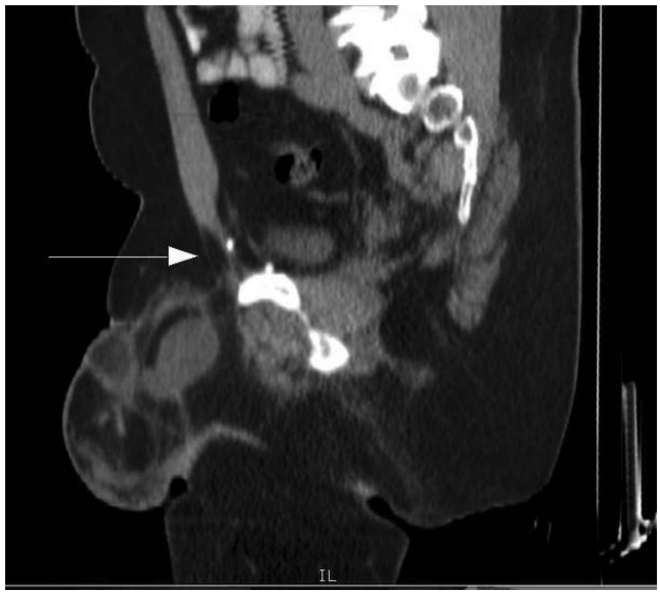

Figure 1. A lipomatous mass extending from the retropubic space to the inguinal canal with lipomatous heterogeneous components (arrow). The hernia defect is shown.

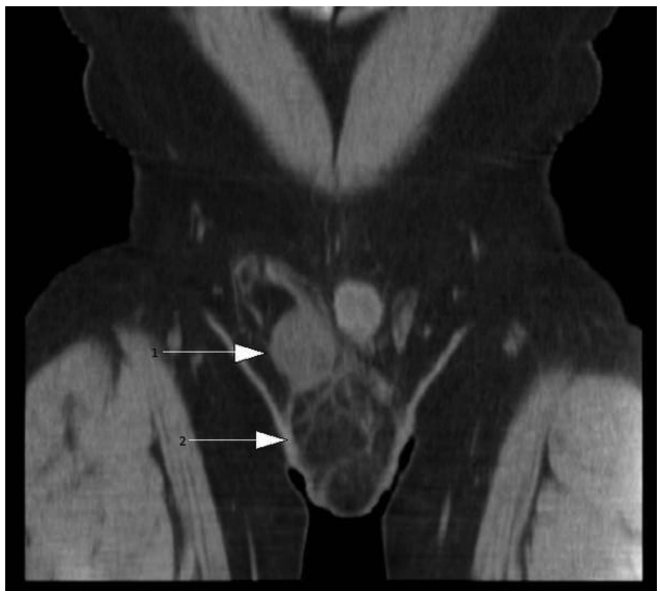

Figure 2. Coronal view shows the mass with testicular structure and heterogeneous components. Note the paratesticular fatty mass within the scrotum (arrow 2) and right testis (arrow 1).

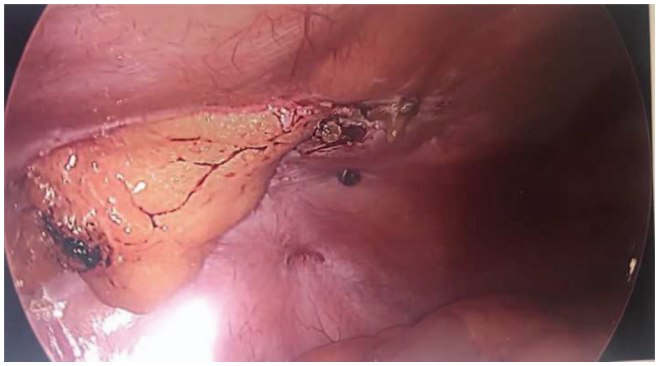

Figure 3. Laparoscopic view.

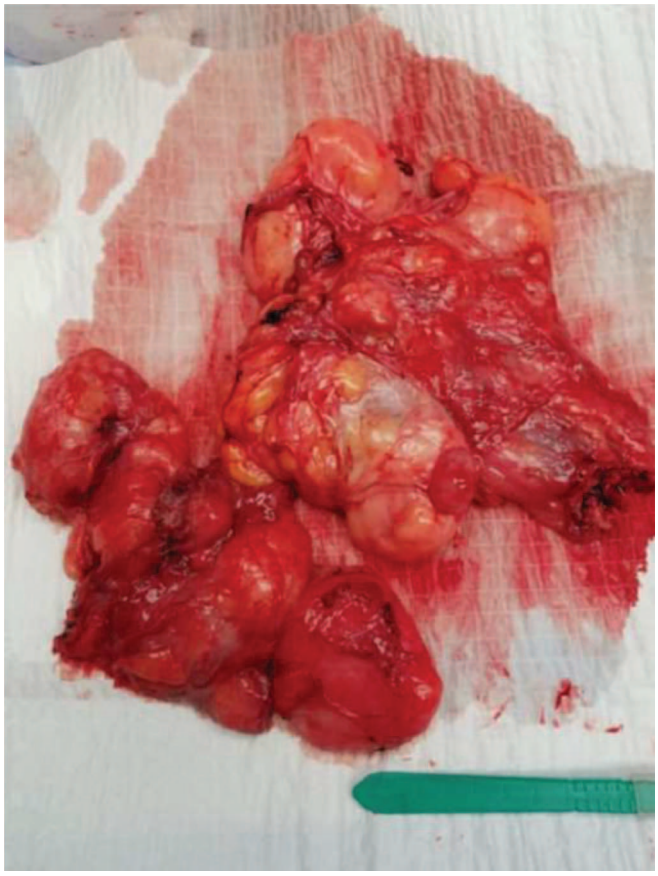

Figure 4. Gross specimen.

whitish-tan tissue was identified (**Figures 5–7**). The remaining tissue was composed of a soft, yellow tissue. The preliminary pathologic report confirmed a scrotal liposarcoma without tumor cell necrosis, and the margins were free of tumor. The closest margin was less than 1 mm.

At the 1-month follow-up, the patient reported mild testicular discomfort and swelling, but no other symptoms.

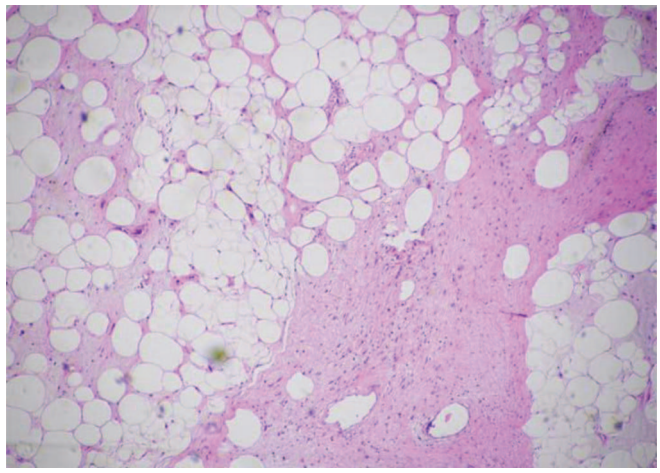

Figure 5. Low-power histologic image.

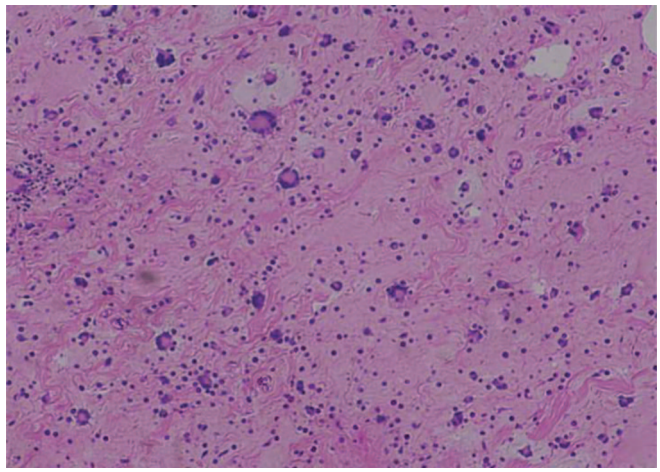

Figure 6. High-power histologic image.

The final pathology report documented an atypical lipomatous tumor and well differentiated liposarcoma (low grade) which was determined by tumor location and resectability. Molecular studies for *MDM2* were recommended. A CT scan at 4 months after surgery showed no recurrence. The patient remained free of recurrence 1 year after surgery.

DISCUSSION

Lipoid tissue appears to be the precursor of spermatic masses in 80% of cases and is currently thought to arise de novo.[4] Most paratesticular malignant masses are sarcomas because of their mesenchymal origin. Lipomatous tissue plays a minimal role in spermatic cord malignancies, comprising about 6% of all sarcomas.[4,5] Histologic analysis most commonly reveals liposarcoma, rhabdomyosar-

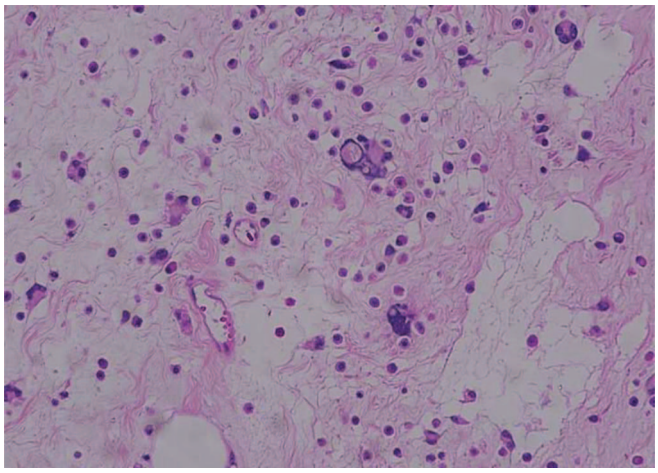

Figure 7. Ultra–high-power histologic image.

coma, or leiomyosarcoma for adult paratesticular malignancy.[6] Most patients present in the fifth or sixth decade, and the usual manifestation is a slow-growing, nontender, painless inguinal or scrotal mass.[2,4] At presentation, the treating physician must consider a wide differential diagnosis that includes hydrocele, spermatocele, inguinal hernia, or testicular tumor.[2]

Classification is based on histology, and there are currently 5 subtypes: well-differentiated, dedifferentiated, round cell, myxoid, and pleomorphic—well-differentiated being of less metastatic potential[2] and the most common (40–45%),[2,7] but having the potential for local invasion. Lipoma-like, sclerosing, inflammatory, spindle cell, and liposarcoma with meningothelial whorls are the most common variants of well-differentiated scrotal liposarcoma.[3] Although the condition has been reported worldwide, Japanese males constitute a high percentage (25%) of reported cases.[8]

Ultrasound should be the first image modality, because it can help differentiate solid from cystic components, and masses of testicular origin, but findings are variable and nonspecific because of heterogenous appearance.[1] The current image modality preferred is CT scan or magnetic resonance imaging (MRI) for evaluation of the scrotum and its contents. In well-differentiated liposarcomas, a CT scan may show predominant adipose tissue (more than 75%) with areas of nonlipomatous components,[3] although there is no pathognomonic finding.[2,7] Lipomas can mimic omental hernias in appearance.

High radical orchiectomy is the current recommended therapy. Retroperitoneal lymph node dissection is not advocated unless there is evidence of tumor invasion.[4] Limited anatomic space in the surgical area makes the operative approach and obtaining successful R0 margins difficult. Positive margins mandate re-exploration.[9] Because locoregional recurrence is found in up to half the cases and obtaining negative margins is difficult, some surgeons recommend adjuvant radiotherapy.[2,5,10] Our case involved complete resection of the tumor with negative margins and preservation of the testicle, and adjuvant radiation was therefore not indicated.

Adjuvant therapy is currently controversial because of insufficient data. It has been recommended by a few clinicians when there were multiple recurrences, margin positivity, or poor prognostic factors, such as high-grade tumor and difficulty in achieving negative margins. A recent study showed local disease control in patients with high failure risk, but no change in long-term survival (5 years).[11] Because of resistance to treatment, chemotherapy is not recommended.[5]

Postoperative surveillance entails regularly scheduled follow-up at 3-month intervals, with lengthening of the intervals after 6 months.[11] Long-term follow-up benefits have not been established, but observation should extend beyond 10 years.[4] As this pathology continues to be studied and new data collected, guidelines for treatment should be developed. Although it had been a relatively short time since surgery, at 1-year follow-up, our patient remained disease free, but long-term follow-up is mandatory.

Our inability to find another case in the literature with a laparoscopic approach has limited our case study discussion. However, scrotal mass requires a careful history and physical examination. Although malignancy is rare, such findings merit adequate diagnostic studies and specialist evaluation for intervention as necessary. Extended follow-up is needed due to risk of recurrent disease.

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