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# PARATESTICULAR LEIOMYOSARCOMA: CASE REPORT

# LEIOMIOSARCOMA PARATESTICULAR: RELATO DE CASO

# LEIOMIOSARCOMA PARATESTICULAR: REPORTE DE CASO

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## ABSTRACT

Paratesticular leiomyosarcoma (LMS) is a rare tumor; soft tissue sarcomas represent 1% of all neoplasms in adults. They are located in the extremities and retroperitoneal region. Leiomyosarcoma is one of the most common histological subtypes, which develop in the paratesticular region. The origins are usually in the intratesticular tubules, the epididymis, the spermatic cord, the dartos layer, and the scrotal skin.We present the case of a 54-year-old male patient who came to the outpatient oncological surgery clinic. Two years prior, he underwent excision of a right epididymal cyst with multiple septations and a right inguinal hernioplasty. One year prior, he reported nodular lesions in the right epididymis, which had increased in size. An imaging study was performed: a scrotal ultrasound, which revealed an extensive tumor mass that appeared to originate from the right epididymis. This solid, lobulated mass, with echogenic areas or calcifications, measured 8.6 x 5.8 cm and showed areas of central hypervascularization. This extensive mass compressed and displaced the testicle anteriorly and superiorly. Physical examination revealed a large right testicle with a 10 x 9 cm mass in diameter, of stony consistency but mobile, located in the right scrotal sac. A right radical orchiectomy and left superficial inguinal lymphadenectomy were performed. According to the results of the biopsy sample, histological findings were consistent with a paratesticular mesenchymal tumor with immunohistochemical markers positive for FNCLCC grade 1 leiomyosarcoma.

**Keywords**: Paratesticular Leiomyosarcoma. Radical Orchiectomy. Scrotal Tumor.

## RESUMO

O leiomiossarcoma paratesticular (LMS) é um tumor raro; os sarcomas de tecidos moles representam 1% de todas as neoplasias em adultos. Eles estão localizados nas extremidades e na região retroperitoneal. O leiomiossarcoma é um dos subtipos

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histológicos mais comuns, que se desenvolvem na região paratesticular. As origens geralmente estão nos túbulos intratesticulares, no epidídimo, no cordão espermático, na camada dartos e na pele escrotal. Apresentamos o caso de um paciente do sexo masculino, de 54 anos, que compareceu ao ambulatório de cirurgia oncológica. Dois anos antes, ele havia sido submetido à excisão de um cisto epididimário direito com múltiplas septações e a uma hernioplastia inguinal direita. Um ano antes, ele relatou lesões nodulares no epidídimo direito, que haviam aumentado de tamanho. Foi realizado um exame de imagem: uma ultrassonografia escrotal, que revelou uma extensa massa tumoral que parecia se originar do epidídimo direito. Esta massa sólida e lobulada, com áreas ecogênicas ou calcificações, media 8,6 x 5,8 cm e apresentava áreas de hipervascularização central. Esta extensa massa comprimia e deslocava o testículo anteriormente e superiormente. O exame físico revelou um testículo direito aumentado com uma massa de 10 x 9 cm de diâmetro, de consistência pétrea, porém móvel, localizada no saco escrotal direito. Foi realizada orquiectomia radical direita e linfadenectomia inguinal superficial esquerda. De acordo com os resultados da biópsia, os achados histológicos foram compatíveis com um tumor mesenquimal paratesticular com marcadores imuno-histoquímicos positivos para leiomiossarcoma grau 1 de FNCLCC.

**Palavras-chave:** Leiomiossarcoma Paratesticular. Orquiectomia Radical. Tumor Escrotal.

**RESUMEN**

Nuestro tiempo está siendo sacudido por cambios políticos, sociales, económicos y en las subjetividades que, aunque venían siendo señalizados, comienzan a irrumpir abruptamente como grandes e incesantes avalanchas, despertando sensaciones de incertidumbre, temores y desorientaciones. La elección de Donald Trump para el gobierno de los Estados Unidos de América (EUA) está siendo el gran detonante. Investido en enero de 2025, desencadenó inmediatamente una política agresiva contra otros países y gobernantes considerados enemigos peligrosos. El objetivo de este artículo es intentar comprender estrategias de producción de sentido utilizadas por Trump para justificar y legitimar sus acciones intervencionistas, sobre todo en Venezuela, contra el gobierno de Nicolás Maduro. Para ello, fueron recolectadas, en la gran prensa, noticias, mensajes publicados en redes sociales, declaraciones en entrevistas y anuncios de gobierno hasta el día 20/01/2026. Además, fueron compilados artículos periodísticos de columnistas de los principales vehículos de comunicación. El material recolectado fue sometido a un análisis de contenido y puesto en discusión con el auxilio de autores y teorías pertinentes a las categorías de análisis establecidas. Fue posible verificar que Trump utiliza declaraciones cortas y vagas, proferidas de manera asertiva y categórica, en tono amenazador y cargadas de contenidos emocionales de índole agresiva para subyugar, convencer e imponer por la fuerza aquello que juzga como necesario y benéfico para su país. Racionalizaciones, negacionismos, desplazamientos encubridores de sus verdaderas intenciones son algunos de los principales artificios utilizados. Atacando y debilitando el orden mundial, se vale del caos, de la intimidación y del miedo para ejercer un poder absolutista, imperialista.

**Palabras clave:** Leiomiosarcoma Paratesticular. Orquiectomía Radical. Tumor Escrotal.

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## 1 INTRODUCTION

Paratesticular soft tissue tumors are rare entities, with malignant subtypes representing 3% and sarcomas being the most common type, accounting for 90% (1). The majority of paratesticular masses are benign and include lipomas, adenomatoid tumors, and leiomyomas; however, less than one-third are malignant. Testicular cord sarcomas are very rare, almost anecdotal, so their management is controversial, and the existing evidence is low (2). Treatment for sarcomas is surgical, ideally achieved through optimal resection via radical inguinal orchiectomy with resection of surrounding tissue, as well as high ligation of the spermatic cord at the external inguinal ring (3).

The goal of resection is to obtain negative margins; positive margins are associated with a worse prognosis(4). While the role of chemotherapy and radiotherapy is debated, they are currently considered to have a limited function (5).

In the present case report, we present a 54-year-old man with a right paratesticular tumor with a surgical history of ipsilateral hernioplasty; a radical orchiectomy via the inguinal route and wide resection of the tumor and adjacent tissues to ensure a resection with negative margins was performed; a well-differentiated right paratesticular leiomyosarcoma was reported in the final pathology.

## 2 CASE REPORT

A 54-year-old man, with a history of epididymal cyst resection and right inguinal hernioplasty 2 years ago, with no other significant medical history, presents a clinical picture of approximately one year, with right testicular pain of mild to moderate intensity with adequate control with analgesia, and a paratesticular tumor with progressive increase in size. A soft tissue ultrasound was performed and a solid tumor in the epididymis was evidenced, with lobulated borders and calcifications.

Given the findings and with suspicion of a neoplasm, he was referred to the surgical oncology clinic. On physical examination, a right supratesticular tumor was identified; it was firm, mobile, and not adherent to adjacent structures. No inguinal lymphadenopathy was identified. A CT scan with oral contrast was ordered, which revealed a right intrascrotal tumor, likely originating from the epididymis. The tumor was solid in appearance, with irregular borders, intratumoral calcifications, and no identifiable dissection plane between the tumor and the testicle (Figure 1). No regional lymphadenopathy or distant disease was evident.

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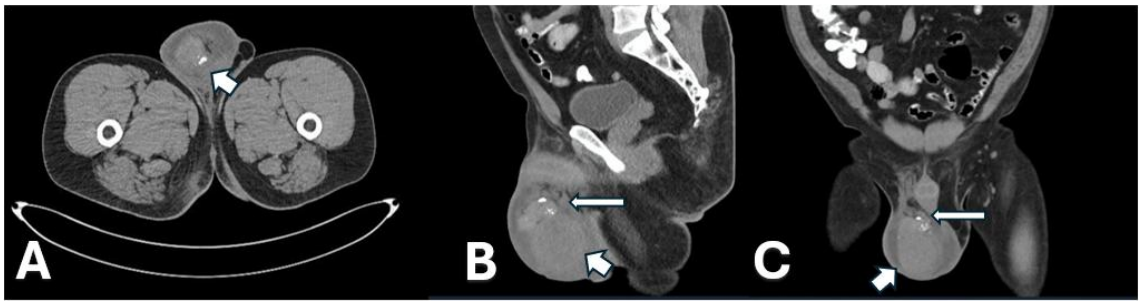
**Figure 1**

*CT with oral contrast A. Axial section showing an isodense tumor, with intratumoral calcifications. B. Sagital section showing supratesticular heterogeneous tumor (long arrow), displacing the right testicle (short arrow), no dissection plane is shown between the tumor and the testicle C. Coronal section showing supratesticular tumor with intratumoral calcifications (long arrow), displacing the right testicle (short arrow).*




Sources: The authors.

A radical right orchiectomy with wide resection of involved tissues and superficial inguinal lymph node dissection was proposed due to suspicion of an intrascrotal malignancy. The procedure was performed via the right inguinal approach, and the fibrous tract from the previous surgery and the mesh were included in the en bloc resection performed along with the tumor and right testicle. During the lymph node dissection, enlarged and firm lymph nodes were identified. The postoperative course was uneventful, and the patient was discharged 24 hours post-surgery.

The pathology analysis of the surgical specimen showed a 9x7x6 cm tumor (Figure 2), and the histological report showed a well-differentiated paratesticular leiomyosarcoma according to the Fédération Nationale des Centres de Lutte Contre le Cance (FNCLCC). The surgical margins were negative for tumor activity, adjuvant therapy was not considered due to the characteristics of the tumor (Table 1), and the patient was placed on oncological surveillance, with no evidence of recurrence at 6 months of follow-up.

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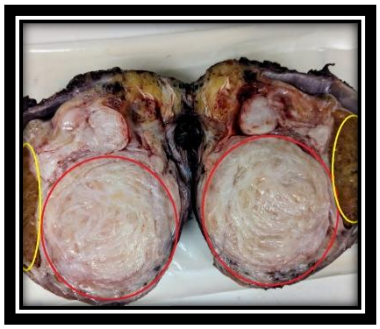
**Figure 2**

*Surgical specimen: Macroscopic description of the surgical specimen: Testicular parenchyma displaced towards the periphery is identified (Yellow Circle). Adjacent to the atrophic-appearing testicle, a well-defined, whitish, whorled-appearing, firm nodular lesion characteristic of a leiomyoma is distinguished (Red Circle)*



Sources: The authors.

**Table 1**

*Pathology results of surgical specimen*

| Sample | Histological description | Immunohistochemistry | Diagnosis |
|---|---|---|---|
| **Radical right orchiectomy** | Paratesticular mesenchymal tumor. Surgical margins: negative for tumor. Lymphovascular invasion: not identified. No infiltration of testicular parenchyma | Desmin: positive. Smooth muscle actin: positive. Skeletal muscle actin: positive. Caldesmon: positive. Calretinin: negative. CD34: positive in blood vessels | Paratesticular Leiomyosarcoma. FNCLCC G1 (differentiation 2; mit 1; necrosis 0) |
| **Right inguinal lymphadenectomy** | 7 non-metastatic lymph nodes (0/7) | | 7 non-metastatic lymph nodes (0/7) |

Sources: The authors.

## 3 DISCUSSION

Soft tissue sarcomas are rare neoplasms and correspond to approximately 1% of adult neoplasms (6). Paratesticular leiomyosarcomas are rare lesions that affect patients of all ages, with a malignancy prevalence of 3%.

Leiomyosarcoma is a paratesticular tumor with a higher incidence in the sixth decade of life, although it can also occur from the fourth decade onward. Its origin is unknown, but

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it is speculated that it may be due to the degeneration of a previous leiomyoma, originating from funicular structures of smooth muscle that can be located in the cremasteric muscle fibers, in the vas deferens, in the funicular vessels, and in vestigial remnants of scrotal wall muscle or mesoblastic remnants trapped in the funicular cord (7).

These lesions are characterized by their macroscopically rounded shape, well-defined borders, and adherence to the internal spermatic fascia. Histologically and genetically it is formed by epithelial, mesothelial and mesenchymal elements, the formations being of a heterogeneous type with different patterns of behavior depending on the histogenetic group from which it arises, therefore it is often difficult to determine the exact site of its origin (3).

Paratesticular leiomyosarcomas (LMS) are divided into two types according to their location: Cutaneous LMS originates in the arrector pili muscle of the hair follicle or in the dartos muscle of the genital skin; Subcutaneous LMS originates in the smooth muscle of the genital organ or in the vascular muscular layer of subcutaneous tissue (8).

In the presence of a testicular or paratesticular lesion suspected of leiomyosarcoma, an ultrasound should initially be performed as the test of choice for evaluating scrotal masses, with a sensitivity of 95% (7). This is followed by computed tomography (CT), which helps to identify homogeneous and hyperechoic patterns frequently seen in benign tumors. Hypoechoic or heterogeneous patterns with hypoechoic and hyperechoic areas with high vascularization are usually malignant in origin. CT and MRI are considered useful for determining the extent of the tumor, and PET/CT is used to determine lymph node involvement (9).

The standard treatment for soft tissue sarcomas is surgical resection with negative margins (10); however, in cord sarcomas it is scarce because they are based on the experience of case reports; and it is limited to testicular resection via the inguinal route with high cord ligation. Positive surgical margins presented a worse prognosis than patients with negative surgical margins, as reported by Kamitani et al. Other retrospective studies also observed that subcutaneous leiomyosarcoma is associated with a higher risk of distant metastasis, unlike cutaneous leiomyosarcoma, and there is mortality (11). although some reports suggest the role of radiotherapy and chemotherapy in the adjuvant setting, their efficacy and benefit remain unclear (5).

Histopathology and immunohistochemistry provide the definitive diagnosis of the pathology (12); surgical resection is usually the definitive treatment; the prognosis for these

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patients is very good; long-term follow-up is important to prevent recurrence and detect distant metastases (13).

## 4 CONCLUSION

Paratesticular leiomyosarcoma is a rare disease, and current evidence is based on retrospective studies. The treatment of choice for this type of tumor is surgical. Histopathology and immunohistochemistry provide the definitive diagnosis. Close postoperative oncological follow-up is necessary due to the risk of recurrence.

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