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CLINICAL CASE

Spermatic cord liposarcoma presented as inguinal hernia: case report

Cesar Villa-Jirash[1], Iñaki Guasque-Gil[2], Nicole Elbjorn-Medina[2], and Julianne Villa-Trejo[3]*

[1]Endoscopy, Gastro Surgery Department, Hospital Star Médica Lomas Verdes, Naucalpan of Juárez, State of Mexico; [2]Mexican School of Medicine, Universidad La Salle; [3]Faculty of Medicine, Universidad de Saint Luke, Mexico City. Mexico

Abstract

Liposarcomas are the most common malignant soft-tissue tumors in adults, predominantly occurring in the extremities and retroperitoneum. Only 3.6% of these tumors affect the scrotum, including the spermatic cord, testicular tunics, and epididymis. We present the case of a 53-year-old man with iliac fossa pain and increased left scrotal volume. Imaging studies included an inguinal ultrasound under stress and computed tomography (CT), which showed the protrusion of the hernial sac with a well-defined wall and fatty content through the inguinal canal. During laparoscopic hernioplasty, a lipomatous tumor was found in the spermatic cord, leading to testicular lumpectomy and left orchiectomy. Histopathological examination revealed a 13 cm well-differentiated liposarcoma, with no evidence of lymphovascular or perineural invasion. Ultrasound was the first study performed due to its availability and usefulness in diagnosing hernias. However, the atypical appearance of the hernial sac content on ultrasound prompted the performance of a CT scan to better characterize the lesion and rule out other pathologies. In conclusion, spermatic cord liposarcoma is a rare entity that can mimic an inguinal hernia. It is essential to consider it as a differential diagnosis in cases of inguinal hernia. Advanced imaging studies can improve the accuracy of pre-operative diagnosis.

Keywords: *Liposarcoma. Inguinal hernia. Spermatic cord. Ultrasonography. Computed tomography.*

Introduction

Liposarcoma is a group of rare neoplasms with an incidence of < 1/100,000 new cases per year. Despite its rarity, it is the most frequent subtype of soft-tissue sarcomas, accounting for approximately 85% of these tumors[1]. The diagnosis is made predominantly in individuals between 40 and 60 years of age and the most common sites of presentation are the extremities and retroperitoneum, although it can also be found in the scrotum. The incidence of liposarcoma in this location is low (3.6%), within the scrotum it can affect the spermatic cord (76%), the testicular tunica (20%), or the epididymis (4%)[2].

There are genetic risk factors, such as Li-Fraumeni syndrome and neurofibromatosis type 1, as well as environmental factors such as exposure to ionizing radiation or certain chemicals, although their etiology remains largely unknown[3]. The World Health Organization classifies liposarcomas into five histological subtypes: myxoid, well-differentiated, dedifferentiated, round cell, and pleomorphic[4]. Spermatic cord liposarcoma represents a diagnostic challenge due to its silent evolution and its similarity to other more common pathologies, such as inguinal hernia, hydrocele, spermatocele or testicular tumors[5]. The available imaging techniques do not always allow a specific diagnosis[6].

Correspondence:
Iñaki Guasque-Gil
E-mail: inakiguasque5@gmail.com

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This article presents a case of well-differentiated liposarcoma of the spermatic cord, initially diagnosed as bilateral inguinal hernia in clinical and imaging studies.

Case presentation

This is a 53-year-old male patient who presented to the emergency department due to pain in the left iliac fossa during physical exertion. In his clinical history, type 2 diabetes controlled with metformin and arterial hypertension under treatment with losartan are reported. The clinical picture had begun a month before the consultation, with pain in the inguinal region after loading efforts. Imaging studies performed included stress inguinal ultrasound and computed tomography (CT), which revealed the presence of a non-reducible left indirect inguinal hernia and a reducible right inguinal hernia with ipsilateral hydrocele (Figs. 1 and 2). Color Doppler ultrasound showed no vascular abnormalities. Ultrasound was the first study performed due to its availability and usefulness in the diagnosis of hernias. However, the atypical appearance of the contents of the hernial sac on ultrasound prompted a CT scan to better characterize the lesion and rule out other pathologies.

The patient underwent surgery for bilateral inguinal hernioplasty with laparoscopic mesh placement. During the intervention, a lipomatous tumor was identified in the spermatic cord, which led to a lumpectomy of the spermatic cord, left orchiectomy, and lymph node dissection. Histopathological analysis revealed a well-differentiated liposarcoma of 13 × 8 × 3 cm in the distal third of the spermatic cord, with no evidence of lymphovascular permeation or perineural invasion. The surgical margins were reported to be free of neoplasia (Fig. 3). Immunohistochemical findings showed positivity for MDM-2, protein P53, CDK-4 and CD34, with a proliferation index of < 10%. The degree of differentiation was 1, according to the French classification of sarcomas (differentiation 1, mitosis 1, and necrosis 0) (Fig. 4).

Discussion

According to the literature, the tomographic findings of liposarcoma can be varied depending on the histological subtype. In the specific case of well-differentiated liposarcoma, CT imaging usually presents as a predominantly lipomatous mass with thick septa or non-lipomatous focal nodules. In this patient, CT showed homogeneous fat attenuation without septa, which is more characteristic of an inguinal hernia. Since inguinal hernias are a common and typically clinically diagnosed pathology, imaging studies play a key role in differentiating them from other pathologies of the inguinal region.

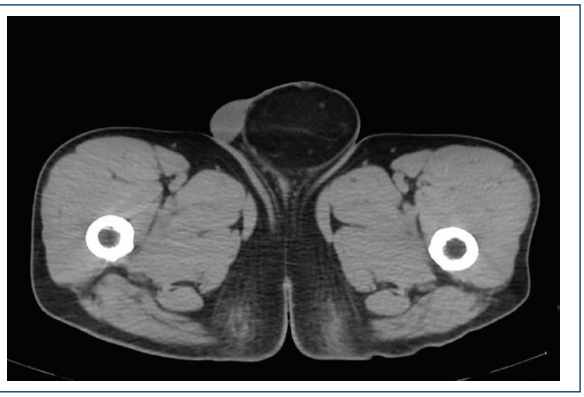

Figure 1. Image of plain tomography of the pelvis at the level of the scrotal pouch, in axial section and with soft-tissue window. An ovoid image with a well-defined contour and a thin hyperdense wall is observed, which is heterogeneous in appearance with a predominance of fat (hypodense on average of –80 UH), as well as isolated hyperdense lines in its interior. It occupies the left scrotal pouch extending from the ipsilateral inguinal canal.

Presentation of soft-tissue tumors in adults is rare. The incidence is estimated to range from 4-5 cases per 100,000 inhabitants per year, of which < 1/100,000 are identified as liposarcomas[1,2]. The different histological subtypes of liposarcomas have prognostic relevance. Well-differentiated liposarcoma is recognized by its low risk of distant metastasis; however, it has a high rate of local recurrence. In the event of recurrence, it may be due to a dedifferentiation event, which is directly associated with increased aggressiveness and a worse prognosis[6,7]. Diagnosis of soft-tissue tumors, including sarcomas, has an inaccuracy rate of 20-30%, due to several factors:

- Its rarity, given its low incidence and the existence of up to 70 subtypes with variable clinical and morphological characteristics.
- The intrinsic complexity of these tumors, since traditional morphological criteria of malignancy, such as the degree of cell differentiation, are not always applicable.
- Technological limitations, since diagnosis requires the combination of microscopic morphology, immunohistochemistry, and molecular genetics.
- The lack of clinical experience with these neoplasms, due to their low prevalence[5].

Figure 2. A: coronal plane image of abdominopelvic plain tomography with emphasis on the left inguinal region and with a soft-tissue window. A saccular image with a well-defined contour and a thin hyperdense wall was observed, which is heterogeneous in appearance with a predominance of fat (hypodense on average of –80 HU), as well as isolated hyperdense lines inside. It occupies the left inguinal canal from its upper third to the ipsilateral scrotal pouch. **B:** coronal plane image of abdominopelvic plain tomography with emphasis on the left inguinal region and with a soft tissue window. A saccular image with a well-defined contour, thin wall and fat content was observed, which occupied the left inguinal canal from its upper third to the ipsilateral scrotal pouch, conditioning caudal displacement of the testicle. **C:** computed tomography image with multiplanar reformatting in the oblique plane where a hernial defect of 20 mm is observed in the left inguinal canal, as well as protrusion of the hernial sac of 18 × 5 mm and fat content with poor interface of the spermatic cord and that conditions inguinoscrotal occupation.

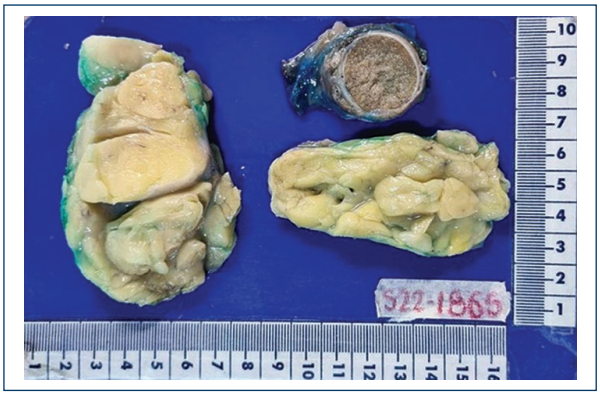

Figure 3. Left testicle and tumor weighing 316 g. Testicle measures 5.0 × 3.5 × 3.0 cm, when cut the testicular parenchyma is solid, light brown, soft, and spongy in appearance without obvious macroscopic lesions. Spermatic cord measuring 10.5 × 1.5 × 0.8 cm. Tumor found in the spermatic cord of 13.0 × 8.0 × 3.0 cm, ovoid and lobed, the capsule is smooth and light yellow; when cut it is solid, light yellow, and soft.

For soft-tissue tumors, especially those located in the extremities, pelvis, or trunk, magnetic resonance imaging (MRI) is the imaging study of choice. However, ultrasound is usually the first study requested in these cases, although it should be complemented with MRI, which provides a better prognostic value in well-differentiated liposarcomas. MRI reveals fatty masses occupying about 75% of the lesion, with low-density features typical of a lipoma. Major prognostic factors include tumor size, the presence of necrosis, and its location. In addition, radiography and CT are useful for ruling out bone tumors, while positron emission tomography is recommended for monitoring and evaluation of the risk of recurrence[8].

The most commonly used immunohistochemical markers in the diagnosis of liposarcomas include MDM2 and CDK4, which are expressed in 100% and 90% of cases of well-differentiated and dedifferentiated liposarcomas, respectively. However, MDM2 has low specificity, which makes it difficult to interpret, especially in the presence of macrophages. On the other hand, CDK4 has limited sensitivity[6]. The treatment of choice is surgical, using high orchiectomy and resection of surrounding tissue to achieve tumor-free margins. However, information on the risk of recurrence and

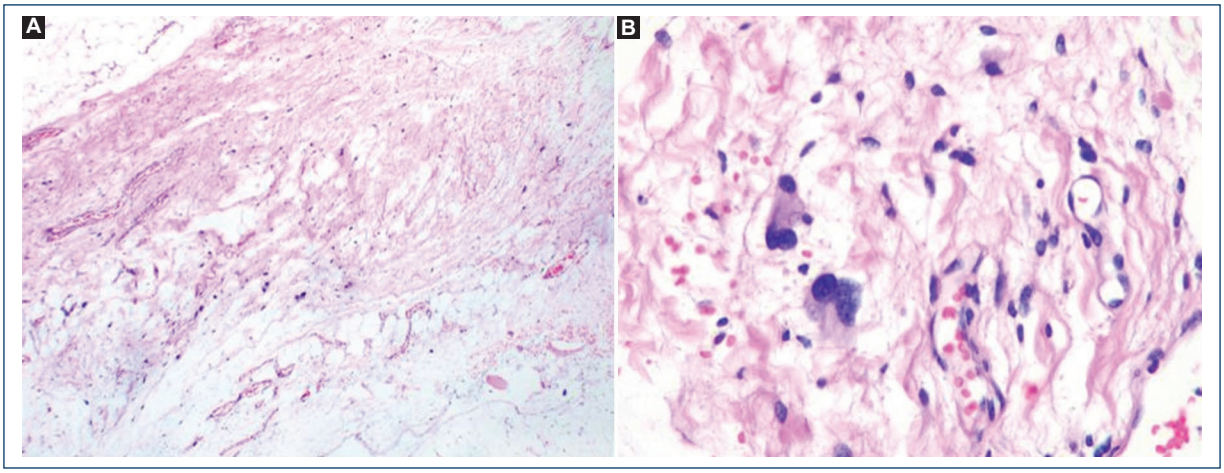

Figure 4. A: histological section with ×10 approach showing malignant mesenchymal neoplasm. **B:** histological section with 40x approach is composed of round-shaped malignant cells with intranuclear vacuoles, stellate, and pleomorphic and hyperchromatic nuclei compatible with lipoblasts, which are identified by immunohistochemistry as MDM2, CDK4, CD34, and P53 positive.

distant metastasis varies depending on the surgical approach (such as reoperation to reduce recurrence or lymphatic dissection). The use of radiotherapy and adjuvant chemotherapy has not shown high effectiveness in these cases[9,10].

Conclusions

The patient was consulted with the oncology service for oncological follow-up and surveillance. Long-term follow-up is recommended due to the risk of local recurrence in this type of tumor. Liposarcoma is a rare neoplasm with a wide variety of clinical presentations. Its silent evolution and the presence of multiple differential diagnoses, together with the lack of a clear etiology, represent a significant challenge for diagnosis. The case presented in this paper exemplifies the management of an unexpected transoperative diagnosis. Currently, the different modalities of imaging studies not only facilitate a more accurate diagnosis but also allow for adequate monitoring of the disease.

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Conflicts of interest

The authors declare no conflicts of interest.

Ethical considerations

Protection of human subjects and animals. The author declares that no experiments on humans or animals were performed for this research.

Confidentiality, informed consent, and ethical approval. The author has followed their institution's confidentiality protocols, obtained informed consent from patient, and secured approval from the Ethics Committee. SAGER guidelines have been followed as applicable to the nature of the study.

Declaration on the use of artificial intelligence. The author declares that no generative artificial intelligence was used in the writing or creation of the content of this manuscript.

References

1. Casali PG, Abecassis N, Bauer S, Biagini R, Bielack S, Bonvalot S, et al. Soft tissue and visceral sarcomas: ESMO-EURACAN clinical practice guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2018; 29 Suppl 4:iv51-67.
2. Shiba Y, Tamura K, Fukiishi Y, Ashida S, Karashima T, Inoue K. Well-differentiated liposarcoma of the spermatic cord: a case report. Urol Case Rep. 2021;36:101587.

3. Scalas G, Parmeggiani A, Martella C, Tuzzato G, Bianchi G, Facchini G, et al. Magnetic resonance imaging of soft tissue sarcoma: features related to prognosis. Eur J Orthop Surg Traumatol. 2021;31:1567-75.
4. Sbaraglia M, Bellan E, Dei Tos AP. The 2020 WHO classification of soft tissue tumors: news and perspectives. Pathologica. 2021;113:70-84.
5. Hsu YF, Chou YY, Cheng YH. Spermatic cord myxoid liposarcoma presenting as an incarcerated inguinal hernia: report of a case and review of literatures. Hernia. 2012;16:719-22.
6. Chalouhy C, Ruck JM, Moukarzel M, Jourdi R, Dagher N, Philosophe B. Current management of liposarcoma of the spermatic cord: a case report and review of the literature. Mol Clin Oncol. 2017;6:438-40.
7. Calleja-Subirán MC, Hernández-Gutiérrez FJ, López-Elzaurdia C, Revestido-García R. Subtipos histológicos de liposarcoma: presentación de cuatro casos. Med Int. 2007;24:179-84.
8. Honoré C, Méeus P, Stoeckle E, Bonvalot S. Soft tissue sarcoma in France in 2015: epidemiology, classification and organization of clinical care. J Visc Surg. 2015;152:223-30.
9. Tirumani SH, Tirumani H, Jagannathan JP, Shinagare AB, Hornick JL, Ramaiya NH, et al. Metastasis in dedifferentiated liposarcoma: predictors and outcome in 148 patients. Eur J Surg Oncol. 2015;41:899-904.
10. Crago AM, Dickson MA. Liposarcoma: multimodality management and future targeted therapies. Surg Oncol Clin N Am. 2016;25:761-73.