Inguinal Solitary Fibrous Tumor: A Case Report
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ABSTRACT
Introduction: A solitary fibrous tumor (SFT) is a rare mesenchymal neoplasm that may occur in a wide range of sites, more commonly in the pleura. We report a well-documented case of an SFT with malignant histology arising in the inguinal region.

Case Presentation: A 59-year-old man, with an unremarkable medical history, presented with a slow-growing painless mass in the left side of the inguinal region, which he had ignored for 3 years. On clinical examination, there was an indurated, irreducible, mobile, and painless mass in the left side of the inguinal area. Magnetic resonance imaging and computed tomography results revealed a 15-cm mass made up of soft tissue and with nonspecific radiologic aspect. The tumor was totally excised, and the results of the pathologic examination concluded it was an SFT.

Discussion: The aim of our case report is to present a rare extrapleural localization of an SFT. Although its radiologic features are not specific, SFT should be considered in the differential diagnosis of inguinal masses.

INTRODUCTION
A solitary fibrous tumor (SFT) is a rare spindle cell neoplasm with usually benign behavior. It was first discovered in the pleura and commonly arises in the thoracic cavity, but it can occur nearly anywhere in the body. Information on the imaging features is sparse because of the rarity of this entity, making preoperative establishment of the accurate diagnosis a serious challenge. We report a rare case of an SFT, with an unusual inguinal location. An effort has been made to anonymize patient information so as to not cause harm to the patient.

CASE PRESENTATION
Presenting Concerns
A 59-year-old man, with an unremarkable medical history, presented to the Surgical Department of our center, reporting swelling in the left side of the inguinal area that gradually enlarged during the previous 3 years. The patient ignored his symptom during this entire period, and he denied any history of pain or inflammatory aspect of this mass, or fever, weight loss, or intestinal transit disorder. His temperature and vital sign values were normal, and no adenopathy was found. On abdominal examination, there was an indurated, mobile, and painless mass involving the left side of the groin, with no inflammatory signs. Manual reduction of this neoformation was unsuccessful (Figures 1 and 2). Findings from the physical examination of the patient’s testicles, spermatic cords, and external inguinal orifices appeared normal, and there was no associated hydrocele.

The laboratory values were unremarkable. Regional ultrasonography results revealed a heterogeneous vascularized mass with calcifications. Magnetic resonance imaging results showed a subcutaneous lobulated mass, isointense on T1-weighted images and heterogeneous on T2, with high enhancement (Figures 3A, 3B, and 3C). Thoracoabdominopelvic computed tomography (CT) results showed a 15-cm lobulated soft-tissue mass, with well-defined margins, containing central calcifications and necrotic foci (Figure 4). Enhancement was heterogeneous and intense, particularly in the peripheral area of the lesion. A large collateral feeding vessel that emerged from the left common femoral artery was also observed (Figure 5). No nodes or metastases were found. Owing to these nonspecific clinical and radiologic data, our team required histologic evidence. Therefore, a biopsy of the lesion was performed, and the pathologic diagnosis was SFT.

Therapeutic Intervention and Treatment
The patient underwent an operation through an inguinal incision. Intraoperatively, we observed a round and encapsulated mass arising within the superficial area that gradually enlarged during the previous 3 years. The patient ignored his symptom during this entire period, and he denied any history of pain or inflammatory aspect of this mass, or fever, weight loss, or intestinal transit disorder. His temperature and vital sign values were normal, and no adenopathy was found. On abdominal examination, there was an indurated, mobile, and painless mass involving the left side of the groin, with no inflammatory signs. Manual reduction of this neoformation was unsuccessful (Figures 1 and 2). Findings from the physical examination of the patient’s testicles, spermatic cords, and external inguinal orifices appeared normal, and there was no associated hydrocele.

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inguinal ring, which was well vascularized with some adherences to adjacent structures. Examination of the anatomical structures of this area did not find any other anomalies. The tumor was completely and easily removed after gentle resection of the fibrotic adherences. The postoperative course was uneventful.

On gross examination, the tumor was well circumscribed, solitary, and encapsulated, measuring 13 × 10 × 5 cm (Figure 2). A cut section of the tumor showed lobulated and fasciculated white firm tissue, with foci of hemorrhage. Microscopic examination showed tumor proliferation with alternating hypocellular and hypercellular areas with thin-walled, branching, hemangiopericytoma-like vessels. The central area of the neoplasia was hypercellular, with spindle cells forming short compact fascicles arranged in a whirling pattern, without atypical nuclei (Figures 6A and 6B). This area showed approximately 10 mitoses per 10 high-power fields, with focal tumor necrosis and myxoid change. Immunohistochemically, the tumor stained positive for CD34 and Bcl-2. The diagnosis of SFT was confirmed.

**Follow-up and Outcomes**

After 11 months of follow-up, including 2 CT scans at 3 and 9 months, there has been no clinical or radiologic evidence of recurrence. A timeline of the case appears in Figure 7.

**DISCUSSION**

An SFT is a rare mesenchymal neoplasm, which was first described in pleura. Even if most of these tumors classically arise in the thoracic cavity, many other locations were recently documented, such as the soft tissues of the extremities, the head, the neck, and the abdominal organs.

In particular, the inguinal location is barely identified in the literature, with just 12 cases. An SFT is observed in middle-aged adults, with no sex predilection, and it is usually described as an asymptomatic and voluminous, slow-growing mass.

Imaging features of SFT are nonspecific, revealing well-defined and often lobulated masses that displace adjacent anatomic structures. Furthermore, the radiologic aspect depends on the tumor size. For large SFTs, enhancement is typically intense and heterogeneous with central areas of low attenuation that correlate with necrosis, hemorrhage, or cystic degeneration. On magnetic resonance T2-weighted images, lesions are hypointense. In smaller SFTs, enhancement is lower and homogenous. On magnetic resonance T2-weighted images, small lesions are hypointense, which is related to hypercellularity and abundant collagenous stroma. Otherwise, large feeding vessels can be clearly identified on CT scans and magnetic resonance imaging, especially in cases of voluminous tumors. Intratumoral calcifications are infrequent.

Complete surgical excision of the tumor with clear margins is the best therapeutic option to cure the disease and avoid local recurrence of the tumor.
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examination of the resected mass is mandatory to confirm the diagnosis.

The World Health Organization classifies SFT as a fibroblastic intermediate tumor that rarely metastasizes. The main pathologic criteria for malignancy include increased cellularity, high mitotic activity (more than 4 mitoses on 10 high-power fields), necrosis, and/or infiltrative margins.

In our case, a focal high mitotic activity and necrosis were present.

Radiologically, Hélage et al identified, through their study of 56 pleural SFTs, CT features differentiating benign and malignant SFTs. In their analysis, tumor size (≥ 10 cm) and hypervascularization were the most relevant factors. Inguinal location of SFT is rare. The tumor can arise from soft tissue, as reported in our case, as well as from spermatic cord, as described by Hu et al. Nevertheless, in that area, the malignant differential diagnosis is mainly made by the several subtypes of sarcomas that have a much worse prognosis.

Generally, the prognosis is excellent for patients with SFTs that have been completely excised. However, local recurrences and metastasis have been reported, even in tumors without histologic malignancy criteria. Metastases can even occur several years after the surgical treatment. Therefore, a long-term follow-up remains necessary in all cases.

CONCLUSION

Inguinal SFT is a rare condition. It can simulate an inguinal hernia, and its surgical resection, in association with the findings from histologic examination, is still the appropriate option for cure and confirmation of the diagnosis. As for any other SFT location, imaging findings are generally nonspecific for a pathognomonic diagnosis. However, the combination of certain characteristics should orientate the radiologist to the possible diagnosis of SFT.

Disclosure Statement
The author(s) have no conflicts of interest to disclose.

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