



Case Series

Lipoma of the fossa femoralis mimicking a femoral hernia. Report of 2 cases

G. Amato^{a,*}, G. Romano^b, A. Agrusa^b, V. Rodolico^c, L. Gordini^d, P.G. Calò^d^a Postgraduate School of General Surgery, University of Cagliari, Monserrato, Cagliari, Italy^b Department of General Surgery and Urgency, University of Palermo, Italy^c Department of Pathologic Anatomy and Histology, University of Palermo, Italy^d Department of Surgical Sciences, University of Cagliari, Monserrato, Cagliari, Italy

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ABSTRACT

INTRODUCTION: Lipoma of the femoral fossa is uncommon. Often asymptomatic, femoral lipoma may growth within the circumscribed space of the femoral fossa causing pain and discomfort. A worsening pain caused by a lipomatous mass in the femoral area is a clinical feature that can mislead the diagnosis, resembling the more common condition of femoral hernia.

METHODS: Two cases of symptomatic lipomas of the femoral fossa mimicking an incarcerated femoral hernia are presented. In both, Caucasian female, patients clinical examination and ultrasound of the femoral region revealed a painful neoplasm suspected for incarcerated femoral hernia.

RESULTS: Intraoperatively, a mass of encapsulated fat arising from the bottom of the fossa femoralis was found. No visceral protrusion through the femoral ring could be documented. The neoplasms were removed in toto. Histology of the excised specimens evidenced the diagnosis of femoral lipomas suffering by chronic compressive damages. In a midterm postoperative follow up, both patients were symptom-free.

DISCUSSION: A correct preoperative diagnosis of femoral lipoma is challenging, even following an accurate diagnostic pathway. The cases highlighted herewith seem to confirm that lipoma of the femoral fossa can be mistaken with a femoral hernia.

CONCLUSIONS: The clinical and histological features evidenced could result helpful in the differentiation of a lipomatous mass of the femoral fossa from a genuine femoral hernia.

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1. Introduction

Groin pain could be a challenging diagnostic dilemma for the anatomical complexity of the region and could arise from multiple underlying pathological processes.

The groin may be affected by a wide range of pathologic entities; therefore the clinician, the radiologist and the surgeon need to master the anatomy, the pathology for a correct management of this complex region [1].

Lipoma is a benign neoplasm constituted by mature adipocytes [2]. It represents one of the most common mesenchymal tumors and occurs in around 10% of the population in particular between the fifth and the seventh decade without gender predilection [3].

Frequently asymptomatic, lipoma may show a specific misleading symptoms hiding a correct preoperative diagnosis. Generally, its excision is required for cosmetic reasons, for the exclusion of malignancy, and for compression on adjacent organs or structures [4,5]. Further indications for excision include size (greater than 5 cm), subfascial location, rapid growth, clinical features such as pain, firmness, or irregularity [6].

Although lipoma of the inguinal canal is not rare, its localization in the fossa femoralis is uncommon and may lead to erroneous interpretations being sometimes clinically indistinguishable from a groin hernia [7,8].

Women present a lifetime occurrence of groin hernia between 3 and 6% [9]. Femoral hernia is about four times more common in women, in particular, aged over 50 years and represents approximately 5–10% of all groin hernias in adults [10,11].

The high risk of complications such as strangulation and bowel resection discourages a watchful waiting strategy, supporting surgery as the treatment of choice [12].

* Corresponding author at: Via Rapisardi 66, I - 90144, Palermo, Italy.

E-mail addresses: amatomed@gmail.com (G. Amato), giorgio.romano@unipa.it (G. Romano), agrusa.antonino@unipa.it (A. Agrusa), viatorodolico@gmail.com (V. Rodolico), lucagordini@aol.com (L. Gordini), pgcalo@tiscali.it (P.G. Calò).

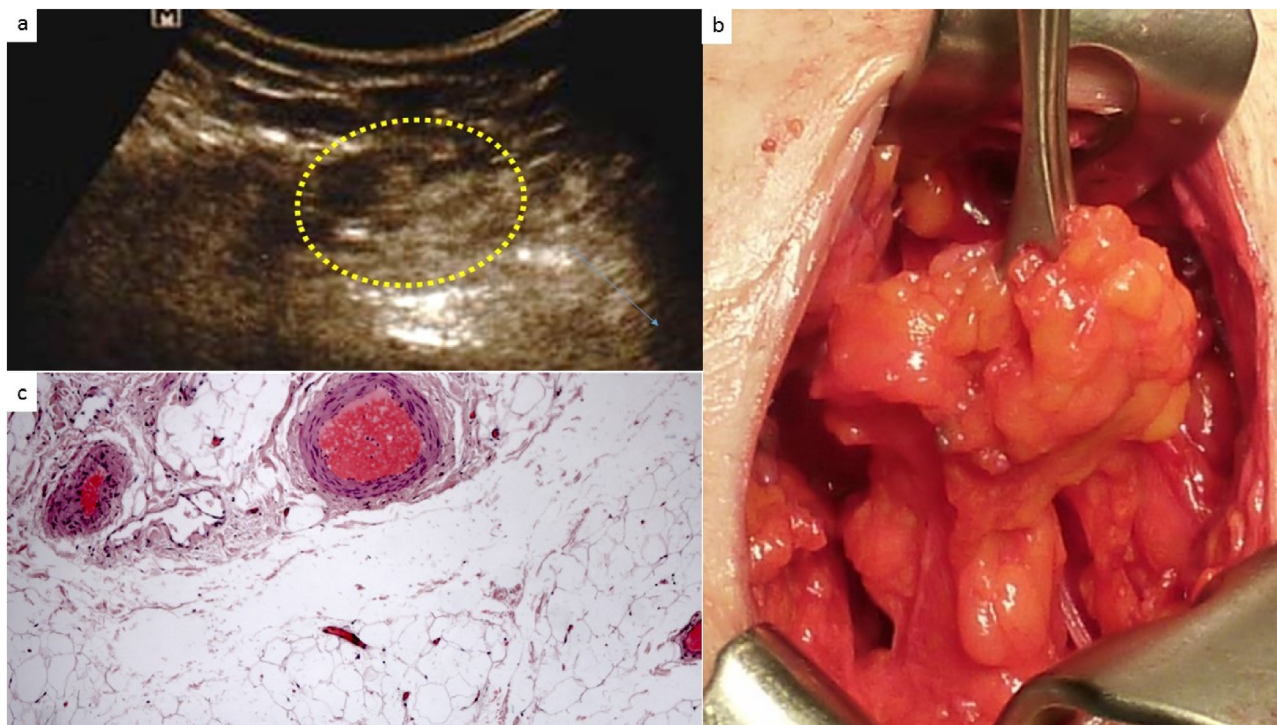


Fig. 1. a) Ultrasound image of the femoral area showing a mass with undefined contour surrounded by fluid suspected for incarcerated femoral hernia. b) Lipoma of the fossa femoralis before removal. c) Histological capture of the specimen: lobules of mature adipocytes with minimal variation in size and shape; slight ectasia of the vascular structures; scattered inflammatory cells (HE $\times 20$).

An incorrect diagnosis may lead to a wrong treatment or the development of intraoperative complications [8].

Lipoma of the fossa femoralis is a poorly recognized entity that may mimic a femoral hernia. Two cases worth of note are highlighted herewith.

2. Material and methods

The study was registered at ResearchRegistry. The research work has been reported in line with the PROCESS criteria [13].

2.1. Presentation of cases

2.1.1. Case 1

A 63 years old Caucasian female presented with severe pain in correspondence of the right fossa femoralis. The pain was perceived as spontaneous and exacerbated with movements. No comorbidities were present. Clinically a small swelling was found. Digital examination of the femoral region confirmed the painful bulge with a positive cough impulse. Ultrasound revealed a mass surrounded by fluid leading to a diagnosis of incarcerated femoral hernia (Fig. 1a) and, consequently, to an emergent surgical revision of the fossa femoralis. Intraoperatively, a 2×4 cm mass constituted encapsulated by bright yellow fat arising from the bottom of the fossa was found without any visceral protrusion through the femoral ring (Fig. 1b). An in toto excision of the neoplasm was carried out, then the wound sutured.

The specimen was fixed in 10% buffered formalin, dehydrated in ethanol and paraffin-embedded according to standard technique; $4\text{--}5$ μm sections were cut and staining with Hematoxylin & Eosin (H&E) and immunostaining was performed [14]. Histopathological examination of surgical specimen showed mesenchymal tissue constituted by lobules of mature adipocytes presenting a slight variation in size and shape and minimal fibrous septa interposed. No necrosis or mitosis were witnessed. Only few lipoblasts

and scattered inflammatory cells, mainly lymphocytes and plasma cells, were also observed (Fig. 1c). Vascular and lymphatic structures showed slight ectasia and, occasionally, signs of congestion supporting the hypothesis of ischemic suffering due to compression. Immunohistochemistry showed positivity for vimentin and S100 protein and negativity for MDM2 (Fig. 1d), p16 and CD34, excluding atypical lipomatous tumor or well-differentiated liposarcoma. Histological and immunohistochemical features supported the diagnosis of lipoma.

At short-term follow-up, no more pain was reported, and even 15 months after the surgical procedure, the patient is still pain-free.

2.1.2. Case 2

A 62-year-old Caucasian female reported sudden painfulness in the right femoral region. The pain was worsening and the discomfort in her right thigh affected the walking. The patient had a left Spigelian hernia repair but no history of comorbidities. Clinical examination could not reveal the origin of the pain. Ultrasonography of the right femoral region showed a small mass in the femoral fossa surrounded by a slight exudative contour raising the suspicion of incarcerated femoral hernia (Fig. 2a). The surgical exploration of the fossa femoralis revealed the presence of a small ($1,5 \times 3$ cm) encapsulated neoformation constituted by bright yellow fat and covered by a thin film of exudate (Fig. 2b). The tumor was in toto excised. No evidence of femoral hernia was found.

The histological and immunohistochemical analysis were conducted in a similar manner of the previous case with comparable findings. Histopathological examination of surgical specimen showed mesenchymal tissue constituted by lobules of mature adipocytes. Edema and chronic inflammatory infiltrate were found. Vascular structures showed a discreet ectasia, probably due to compression. Ischemic injuries were observed as some adipocytes presented focal disruption of the cytoplasmic membranes (Fig. 2c). The immunohistochemical pattern showed similar results of the previous case, with positivity for vimentin and S100 protein and

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