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## Vulvar lipoma: rare case, rare location

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### ABSTRACT

**Background.** Vulvar lipomas are very rare pathologies: indeed, only few cases are reported in the literature.

**Case presentation.** We reported clinical, diagnostic and therapeutical choices of a 44-year aged patient with a rare abnormally sized vulvar lipoma. A Diamond-shaped skin incision was performed and the neof ormation was removed without capsule lesions. A vaginal plastic skin-reducing was performed to reduce redundant tissue. The deep planes of the lesion have been reconstructed to avoid leakage.

**Conclusions.** This kind of lipomas can be potentially diagnosed through clinical examination because of their specific characteristics. However, imaging is advisable to differentiate benign neoplasm from malignant one. Different approaches can be achieved for lipomas based on the size of lump, patient's feelings and necessities and the operation goals; however, the complete surgical excision with the removal of capsules to prevent recurrence remains the treatment of choice for vulvar lipomas. Different surgical approaches aim to achieve better esthetical results, less scarring, and less colour discordance of the connected tissues post-surgery. Surgery is the gold standard for treatment of vulvar lesions. Currently, there is no evidence of long-term follow-up in the literature. We recommend an adequate counseling with the patient to understand their needs and encouraging them to seek medical advice and to tailor the treatment of such lesions.

### INTRODUCTION

Lipomas are slow-growing lumps of fat tissue which are often localized between skin layer and the muscle layer and are often scattered with

strands of fibrous connective tissue [1]. These lesions are benign, soft, non-adherent and painless tumours of adipocytes most commonly seen on the trunk but can be found anywhere on the body, however, are most frequently found in the nape,

shoulders, upper back, abdomen, lower back, and/or proximal portions of the limbs [1, 2]. Lipomas' dimensions usually vary between 1 and 10 cm [1, 2]. Generally, lipomas are small and have slow growth, for this reason they may be unnoticed by patients, and it is important to perform a thorough physical examination and to evaluate possible differential diagnosis. Histologically, lipomas are mesenchymal tumours which arise from adipocytes [3]. At a clinical exam, they appear soft and springy and can be moved readily with slight finger pressure [4]. Epidemiologically they have a prevalence of 1% in the general population and an incidence of 2.1/1,000 people/year [2]. The commonest age at diagnosis ranged between the ages of 40 and 60 [2, 3]. However, vulvar lipomas could be found in various age groups ranging from paediatric age to the ninth decade [4-6]. Despite the classical areas in which lipomas are detected, there are some rare and unusual locations which deserve to be mentioned: vulvar area, for example. Vulvar lipomas are so rare that only a few cases have been reported in the available literature [7-9]. Their pathogenesis is not clear, but available pieces of evidence show that trauma could be accounted as a potential aetiology [5]. These tumours seem to arise from vulvar adipose tissue, and they present as soft, multiloculated, subcutaneous neoformations [5, 6]. At clinical examination they can be found as well demarcated or as pedunculated lesions on the labia majora, rarely bilaterally [8]. The diagnosis is often clinical [9, 10]; however, it is important to highlight the possible differential diagnoses analysing both benign and malignant neoplasms. On the one hand, Bartholin's gland cyst, apocrine adenoma, sclerosing adenosis, phyllodes tumour, hidradenoma papilliform, fibro-cystic disease, syringoma should be taken into account for differential diagnosis. On the other hand, liposarcoma, extramammary Paget's disease, ductal carcinoma, vulvar carcinoma, and mucinous carcinoma should be ruled out [3-11]. Imaging is often required to exclude possible differential diagnosis and can include first and second level examinations [12]: ultrasonography (US) is the first line imaging which should be used for the diagnosis of growing masses [3-6]. However, it is nearly impossible to differentiate lipoma from liposarcoma with US. In order to fill this gap, another imaging technique is needed for the accurate diagnosis of the lesion. Magnetic resonance imaging (MRI) is specific for soft tissues and some case-reports name MRI as

the imaging modality of choice even for its high sensibility and specificity in detecting differential diagnosis [11-13].

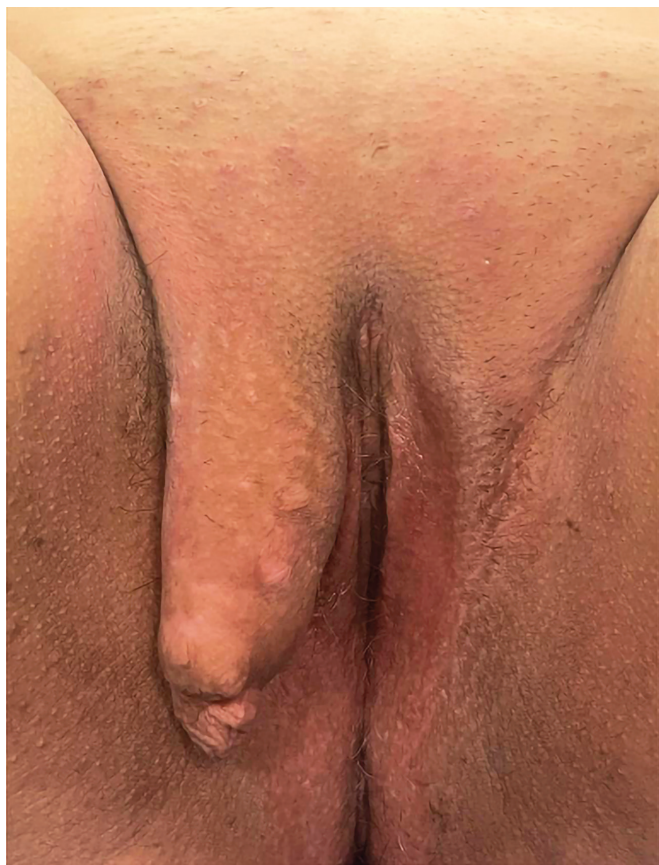
Here, we report a case of a voluminous lipoma site at the right vulvar labia majora that was carefully investigated and consequently surgically excised in our hospital.

## CASE PRESENTATION

A 44-year-old woman, smoker, came to our attention directed by her general practitioner. Her clinical history begins when she was 26 years of age. She reported the presence of a growing formation at external genitalia level. Initially, it was about 4 cm in size. This neoplasm has been misdiagnosed as an ingrown hair. The patient consequently underwent gynaecological checkups and performed ultrasound examinations. The US showed a vascularized formation which required further investigations. Over the years, the patient did not undergo second level tests, but only ultrasounds. Thus, the mass did not stop growing, and the patient started to report symptoms and discomfort. In fact, this condition impacted importantly her quality of life. She started with pain and nuisance during sexual intercourses, being embarrassed and disheartened. Because of all of these reasons, in 2020 she came to our observation.

### Investigations

At clinical examinations an exophytic neoplasia of 13 cm with soft texture and mobile was seen in the III superior of the right labia majora; the other parts of external genitalia were normal (**Figure 1**). The patient underwent a soft tissue ultrasound in November 2022, showing an exophytic development of the size of 15 cm with fibroadipose content with some intralesional vascular signals of both arterial and venous, without clear cleavage planes in the site of implantation of the neoformation. Because the US was inconclusive, in December 2022, an MRI was performed, which confirmed a formation with exophytic development, with dimensions of about 16 × 3 × 3 cm, which appeared hyperintense in the T1-weighted sequences with signal knockdown in T1-weighted with fat suppression (T1F) sequences, as for fat content, without diffusion restriction, nor post-contrast enhancement, and no evidence of significant pelvic lymphadenopathy (**Figure 2**).

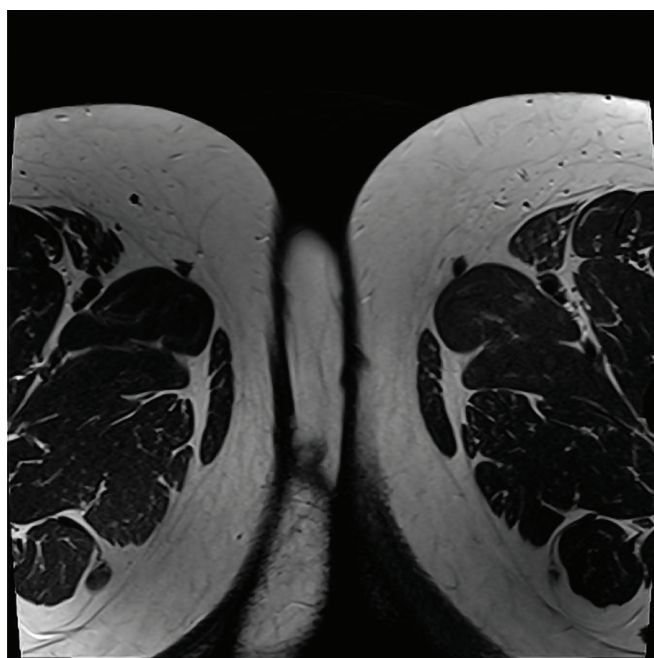
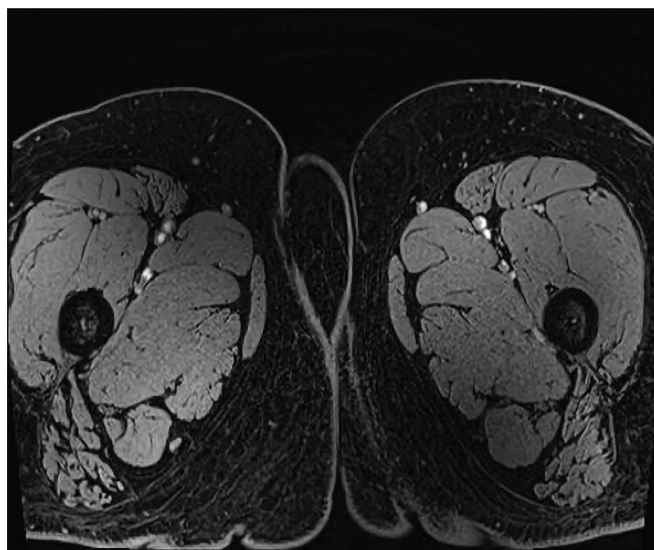


**Figure 1.** Vulvar lipoma of the right labium before surgery.

**Treatment**

In December 2022 the patient underwent the removal of vulvar neoplasm of the root of the right labium and vulvar plastic surgery (**Figure 3**). Diamond-shaped skin incision of 7 cm was performed on the right labium majora. The neof ormation was removed without capsule lesions with blunt technique and the vascular peduncle was bound to the origin to prevent bleeding. A vaginal plastic skin-reducing was performed to reduce redundant tissue. The deep planes of the lesion have been reconstructed to avoid leakage and to prevent the formation of seroceles and haematoceles.

The reconstruction of the tissue planes was done with detached stitches. Skin haemostatic stitches were done. The surgical specimen was sent for definitive histological examination, which identified a vulvar lipoma. Immunohistochemical staining for MDM2 was negative. She was medicated and the stitches were checked after a week from the surgery. No intra-, peri- and post-operative complications were reported. The patient, in consideration of the benign histological examination, is addressed to continue outpatient evaluations and regular routine gynaecological follow-ups (**Figure 4**).

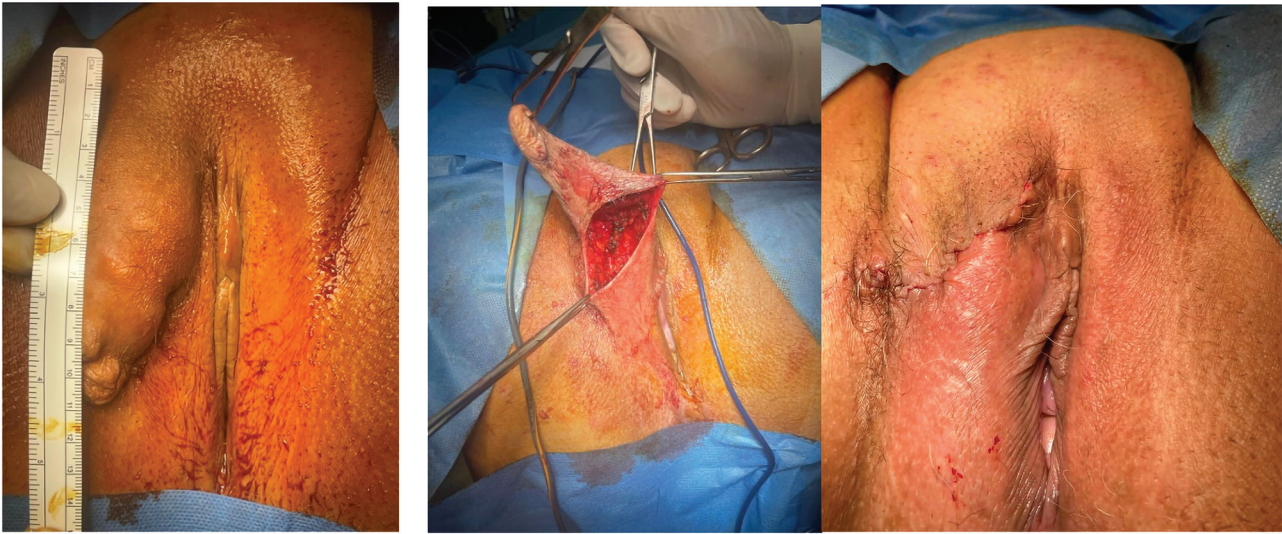


**Figure 2.** MRI scans showing lipoma in the medial portion of right labia majora.

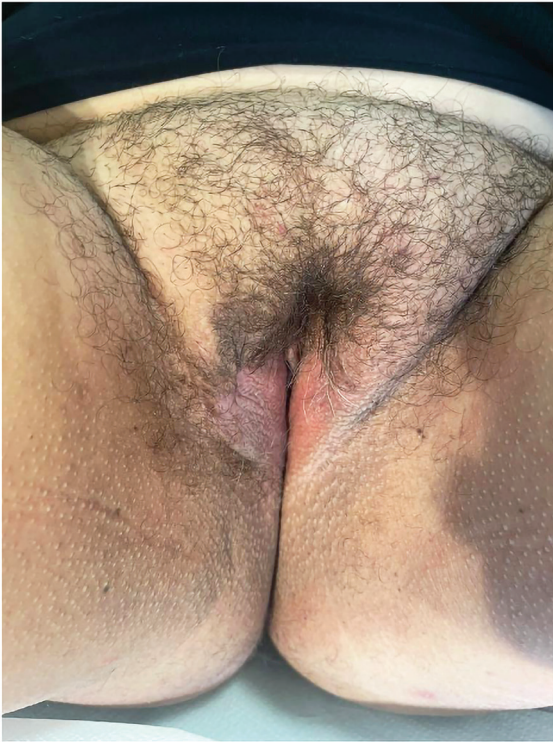
**DISCUSSION**

Vulvar lipomas are rare benign mesenchymal tumours consisting of mature adipocytes with strands of fibrous connective tissue which aetiology and pathogenesis remain unclear [3, 5, 11-14]. Trauma, obesity, and genetic abnormalities are some of the reported risk factors involved in their development [4]. Lipomas typically present without pathognomonic symptoms [5-8]. Because of this reason, in some cases, they could be diagnosed just based on clinical examination [6, 7]. However, the imaging analysis is advisable because of the differential diagnosis that should be performed. US, CT, and MRI are helpful in distin-





**Figure 3.** Surgery and vulvar plastic reconstruction.



**Figure 4.** Surgical outcome.

guishing vulvar lipomas from vulvar cysts, liposarcomas, and inguinal hernias [15-18]. CT scans and MRI are useful in determining the anatomical extent of vulvar lipomas and distinguishing them from liposarcomas, [12, 13]. Nonetheless, as documented by Odoi *et al.* [5], cost and availability restrict their use in most underdeveloped Countries. In our study, an MRI was done to confirm the diagnosis and rule out other differentials, such as liposarcoma and inguinal hernia. Surgical removal,

liposuction, laser therapy, and pharmacological injections are all considered therapeutic options for lipomas in general [4]. Complete surgical excision with the removal of capsules to prevent recurrence remains the treatment of choice for vulvar lipomas [6, 9, 14-16, 19]. Since the studied lump of our case was bigger than usual lipomas and also situated in a delicate location, most adequate approach for treatment and diagnosis was the surgical removal of the mass. In fact, the histological exam was necessary in order to confirm the diagnosis of lipoma because due the uncommon location of this mass. Furthermore, surgical treatment was necessary to help the patient and eliminate her discomfort and pain. In this regard, it is important to consider that the treatment should be tailored on patient's feelings and necessities to improve her quality of life. Furthermore, the type of surgical approach depends on the size of lump and the operation goals. Different surgical approaches aim to achieve better aesthetic results, less scarring, and less colour discordance of the connected tissues post-surgery; indeed, the increasing trend of functional gynaecology, offers a field of great interest [16-18]. The wedge resection was performed in our case. It is possible to perform this technique only if the protrusion is at least of 2 cm beyond the fourchette [16]. A diamond-shaped wedge is excised from the most protuberant part of the lump. The incised edges are then approximated, leaving a free border of the reduced labia without an exposed scar. This technique enables considerable reduction of the labia while maintaining a natural edge in order to obtain a better aesthetic result [20-24].

## CONCLUSIONS

Lipoma of the vulva is a rare occurrence. A comprehensive imaging study is necessary to rule out alternative diagnosis. The surgical treatment of vulvar lipoma is similar to that of other lipomas. Surgery still remains the gold standard for treatment in vulvar lesions. In fact, it is possible to eradicate big vulvar lesions and reconstruct normal vulvar profile in order to increase the patient's quality of life. Currently, there is no evidence of long-term follow-up in the literature.

In case of a big labial lipoma, it is necessary a careful investigation, in order to exclude other malignancies such as liposarcomas. Since it is painless and slowly growing, patients can have the mass for a long time without needing to seek medical advice. MRI is considered the imaging modality of choice to detect the differential diagnosis. Currently, surgery is still the gold standard of treatment. We recommend providing awareness to the women and encouraging them to seek medical advice if they have a vulvar mass. We also recommend a tailored treatment and an adequate counselling with the patient to understand their needs.

## COMPLIANCE WITH ETHICAL STANDARDS

### Authors contribution

I.C., T.G.D'A., C.D.D.: Data curation, writing – original draft. A.G., V.D.D., G.B.: Conceptualization. A.S.L., V.C.: Project administration. A.P., L.M., V.M.: Methodology. G.S.: Writing – review & editing. L.M.: Supervision, validation, visualization. G.P.: Investigation.

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N/A.

### Disclosure of interests

The authors declare that they have no conflict of interests.

### Ethical approval

N/A.

### Informed consent

The patient has signed an informed consent allowing data collection for research purpose.

### Data sharing

N/A.

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