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Giant Lipoma of the Hallux: Presentation of an Observation and Review of the Literature

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Abstract **Case Report**

Soft tissue tumors of the foot are rare and characterized by their slow and asymptomatic evolution, which delays the time of patient consultation. The authors report an exceptional observation of hallux lipoma with irradiation in the 1st intercommissural space. Magnetic resonance imaging is the technique of choice for investigation in the diagnosis of soft tissue tumors. Surgical treatment allowed the histological diagnosis to be made with certainty and to allow normal and painless footwear. The lipoma, despite its exceptional location in the hallux, should be considered as a differential diagnosis of benign foot tumors.

Keywords: Giant lipoma, hallux, foot.

INTRODUCTION

Tumours of the foot are rare and their incidence is about 4% [1]. Lipomas are benign tumours that develop in areas of abundant fatty tissue [2]. They can occur anywhere in the body, with about 15-20% located in the head, neck and back [3]. They are very rare in the foot, and those in the toes are exceptional with one incidence. The lipoma is described as "giant" when the excisional specimen exceeds 5 cm in diameter [4]. We report an observation of a giant lipoma involving the left hallux with irradiation in to the inter commissural space.

OBSERVATION

Mr. T.M., 36 years old, farmer by profession, with no notable pathological history, had been suffering for 2 years from a swelling of the dorsal surface of the left hallux, which was progressively increasing in size. The swelling was not painful, but it became annoying when putting on shoes.

Clinical examination revealed a mobile swelling of approximately 7cm x 3cm, of elastic consistency on the first dorsal surface of the first phalanx of the left toe, radiating towards the first inter-commissural space, limiting the articular amplitudes of the inter-phalangeal joint, without any inflammatory signs or sensory deficits (Fig. 1).

Fig-1: Preoperative clinical appearance

Standard radiography showed soft tissue opacification, without calcification or bone involvement. Ultrasound revealed a benign-looking, oval, well-limited tissue mass on the dorsal surface of the left hallux, measuring 7 x 3.78 cm, hypovascularised on pulsed Doppler.

Preliminary biopsy of the mass was performed and the anatomopathological examination was in favour of a lipoma. In a second step, a complete removal of the tumour was performed (Fig. 2 and 3).

Fig-2: One-piece enucleation of lipoma

Fig-3: Macroscopic appearance of the surgical specimen

The histological study of the excisional specimen, which measured 7 cm by 4 cm and weighed 96 grams, concluded a lipocytic lipoma without signs of malignancy.

After eight months, the patient has no recurrence and the function of the hallux is excellent.

DISCUSSION

A lipoma is a benign tumour consisting of mature fat [2]. It is often painless and usually results in a soft, regular, mobile tumour. Posch [5] described the clinical test of applying ice to the tumour, which in the case of lipoma leads to solidification of the mass. The usual course is slow growth, which may stabilise spontaneously.

Lipomas are benign tumours of extraneural origin and account for approximately 16% of mesenchymal tumours [6]. According to the WHO Committee for the Classification of Soft Tissue Tumours [7], they are classified into several entities: lipoma, lipomatosis, nerve lipomatosis, lipoblastoma, angiolipoma, soft tissue myolipoma, chondroid lipoma. These benign adipocytic lesions can affect the bone: intraosseous lipoma, paraosteal lipoma. They can also affect the joints and tendons, either in a focal form or more commonly in a diffuse form (arborescent lipoma).

Lipomas are uncommon in the foot and are extremely rare in the toes. They are termed "giant" when the excised part exceeds 5 cm in diameter [4]. They occur mainly in the fifth and sixth decade. These tumours may be superficial, originating from subcutaneous tissue. Finally, in a few cases, they may originate from juxta-articular regions or near the periosteum (paraosteal lipoma), they may reach the bone and cause cortical hyperostosis [8].

Clinically, superficial lipomas are often asymptomatic, slow growing, fluctuating soft, lobulated and mobile. When they are located in anatomical channels, they can cause nerve compression resulting in pain and sensory-motor disorders downstream. Because of their size, they can lead to a limitation of mobility and difficulties in footwear. They can also cause lateral deviations of the toes when the tumour is located around the metatarsophalangeal joints [8]. Radiological investigations make the diagnosis of lipoma in 71% of cases. CT and especially nuclear magnetic resonance imaging (MRI) are useful in the evaluation of these lesions. MRI is the reference examination for soft tissue tumours because of its high sensitivity. It specifies the nature of the lesion, its local extension and its relationship with the vascular and neural elements. The characteristic appearance of a lipoma is a well-limited image with hyper signal on T1 and T2 sequences, with reduction of the signal on fat suppression sequences. In some cases, the image includes fibrous septa or calcifications. After injection of gadolinium, the fibrous septa are moderately enhanced, but the fat retains the same signal [9, 10]. In a series of 134 MRI scans of ankle and foot tumours and pseudotumours, the preoperative MRI diagnosis of benign lipoma was confirmed by histology in 94% of cases for Capelastegui et al [4].

The differential diagnosis is with other soft tissue tumours such as ganglion cysts, giant cell tumours, myxomas, angiolipomas, intraneural lipofibroma and liposarcoma [8]. The latter is the most risky differential diagnosis for the patient. It is the most common soft tissue sarcoma in adults, with a frequency of 1.1-2.5/1000,000,000, peaking between the ages of 50 and 70 [11]. It develops from subcutaneous fat or cell spaces, sometimes even from a pre-existing or recurrent lipoma.

In the foot and toes, marginal excision is the treatment of choice for benign lipomas. Careful identification and dissection of vascular and neural elements is required to avoid iatrogenic injury. Excision should be as complete as possible to minimise the risk of local recurrence.

CONCLUSION

Lipomas are rarely found in the foot and even more rarely in the toes. Simple or superficial lipoma remains the most common type in this area, followed by paraosteal lipoma.

The diagnosis of lipoma of the toes can be difficult precisely because of their rarity at this level, and also, sometimes, because of the depth of the lipomatous mass. MRI is the most interesting radiological investigation, for diagnostic purposes and with a definite therapeutic influence.

Histological examination of the excisional specimen remains mandatory to confirm the diagnosis and to eliminate the main differential diagnosis, namely liposarcoma.

However, recurrences are still exceptional [4, 5].

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