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Case Report

Giant Compressive Intramuscular Lipoma of the Calf Presenting as Tibial Nerve Neuralgia After Traditional Massage: A Case Report

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Abstract

Introduction. Giant intramuscular lipoma is a rare benign tumor. Because of its deep location, it may cause nerve compression and raise concern for an atypical lipomatous tumor. We report a giant lipoma of the soleus muscle complicated by tibial nerve neuralgia after traditional massage and briefly describe the clinical, imaging, surgical and histological findings. Clinical examination, ultrasonography, operative findings and histology were reviewed in this single case observation. Case presentation. A 58-year-old female farmer with no medical history presented with a left calf swelling that had slowly enlarged over five years. After one month of traditional massage consisting of repeated deep manual pressure and kneading applied locally to the calf, she developed neurogenic pain radiating to the foot, associated with plantar paresthesia and a positive Tinel sign. Ultrasonography showed a heterogeneous calcified mass measuring 15 × 7 × 4 cm within the soleus muscle. A marginal en bloc resection was performed with release of the posterior tibial neurovascular bundle and neurolysis. Histology confirmed a benign lipoma. Conclusion. Traditional massage may have hypothetically decompensated chronic tibial nerve compression related to the lipoma. Complete excision with neurolysis led to rapid neurological improvement, with no clinical recurrence at six months; longer follow-up remains recommended.

Keywords

Giant Lipoma, Intramuscular Lipoma, Calf, Soleus Muscle, Tibial Nerve, Traditional Massage, Nerve Compression, Case Report

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1. Introduction

Lipomas are the most common benign soft-tissue tumors. The term “giant” is usually applied when the lesion exceeds 10 cm in its largest diameter or weighs more than 1,000 g, a situation in which atypical lipomatous tumor or well-differentiated liposarcoma must be ruled out [1-3].

Intramuscular lipomas are rare and may remain silent for a long time. In the calf, growth near the tibial neurovascular bundle may cause neuropathic pain, plantar paresthesia and a positive Tinel sign through irritation or compression of the tibial nerve [4, 5].

Deep traditional massage may hypothetically act as a decompensating factor in a pre-existing bulky lesion, through mechanical irritation, edema or microtrauma. We report a giant intramuscular lipoma of the soleus muscle presenting as tibial nerve neuralgia after traditional massage [6, 7, 12].

2. Clinical Observation

A 58-year-old female farmer, with no known medical or surgical history and no comorbidities, was seen for a large swelling of the left calf that had progressively enlarged over five years, with no history of initial trauma. Because of a feeling of fatigue in the left lower limb, she had undergone local traditional massage consisting of repeated deep manual pressure and kneading applied locally to the calf for about one month. After these massages, she developed intense neurogenic pain in the left calf, radiating to the foot, worsened by walking and prolonged standing, and associated with paresthesia of the sole and toes. Clinical examination revealed a large left calf mass that was firm, tender and mobile, with no local inflammatory skin changes or distal vascular compromise. Peripheral pulses were present. Neurological examination found paresthesia in the sensory territory of the tibial nerve, with a positive Tinel sign, suggesting neuralgia due to irritation or compression of the posterior tibial nerve.

Ultrasonography showed a heterogeneous hypoechoic mass with internal calcifications, measuring 15 × 7 × 4 cm, arising from the soleus muscle. Given the depth, giant size and heterogeneous appearance of the lesion, excision with pathological analysis was indicated to rule out an atypical lipomatous tumor.

Marginal resection was performed under spinal anesthesia, with the patient in the prone position, through a posterior approach. After release of the posterior tibial vascular bundle and neurolysis of the tibial nerve, the tumor was removed en bloc with a macroscopically healthy margin. Pathological examination confirmed a benign lipoma. The postoperative course was uneventful, with marked regression of neurological signs from the first postoperative week. No clinical recurrence was observed after six months of follow-up.

Figure 1. *Large swelling of the left calf.*

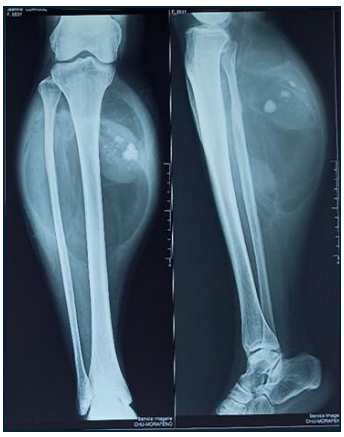

Figure 2. *Imaging of the calf mass.*

Figure 3. *Intraoperative excision.*

3. Discussion

The giant nature of the tumor was established by its 15 cm largest diameter, exceeding the commonly accepted 10 cm threshold [1]. Large size, deep location and progressive growth require a structured diagnostic approach, because deep lipomas may mimic atypical lipomatous tumors [2-4]. In our case, the five-year history, mobility, absence of systemic signs and benign histology supported the diagnosis of lipoma, whereas the heterogeneous ultrasound appearance and calcifications justified pathological confirmation.

Ultrasonography helped determine the intramuscular location and size of the mass. However, magnetic resonance imaging (MRI) remains the reference examination for deep lipomatous tumors, as it assesses neurovascular relationships and looks for signs of atypia such as thick septa, non-fatty components, nodules or contrast enhancement [8-10, 13]. The absence of preoperative MRI is a limitation of this observation, but the tumor size and compressive symptoms made surgery appropriate.

The neurological symptoms can be explained by the close relationship between the tibial nerve and the posterior compartment of the leg. A mass arising from the soleus muscle may cause extrinsic compression or mechanical irritation of the nerve, resulting in plantar paresthesia, radiation to the toes and a positive Tinel sign [5]. The rapid improvement after excision and neurolysis supports a probably reversible compressive neuropathy.

Traditional massage cannot be considered the cause of the lipoma, which had been evolving for years. However, the chronology suggests a triggering or aggravating role in the painful decompensation. Hypothetically, repeated microtrauma, local edema, nerve irritation, inflammation or a transient increase in pressure within a compartment already occupied by the tumor may be involved. Traumatic complications related to massage have been reported, although they remain rare [6, 7, 12]. Her farming activity, involving prolonged standing and repeated lower-limb load, may have contributed to earlier awareness of calf fatigue, but cannot be considered a proven etiological factor.

Treatment of symptomatic intramuscular lipomas is based on complete excision, most often marginal, while preserving the neurovascular structures. In our observation, en bloc excision combined with release of the posterior tibial vascular bundle and neurolysis allowed rapid clinical improvement. The absence of recurrence at six months is favorable, but longer follow-up remains recommended because of the deep and giant nature of the lesion [11, 14, 15].

4. Conclusions

Giant intramuscular lipoma of the calf is a rare entity that may become symptomatic through compression of the tibial nerve. Traditional massage may hypothetically act as a triggering factor for mainly neurological complications. Marginal en bloc excision combined with neurolysis can allow rapid neurological recovery. Longer follow-up is recommended because of the deep and giant nature of the lesion.

Abbreviations

MRI Magnetic Resonance Imaging

Author Contributions

Andrimpitia Randrianirina: Conceptualization, Data curation, Investigation, Writing – original draft

Harinarindra Ranaivoson: Validation, Visualization

Sitrakiniaina Tojomanajara: Investigation, Project administration

Malinirina Fanjalalaina Ralahy: Supervision, Ressources

Henri Jean Claude Razafimahandry: Investigation

Gaetan Duval Solofomalala: Methodology, Project administration

Data Availability Statement

The data is available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

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