

Giant "Crescent-Shaped" Lipoma of the Hand: A Rare Clinical Case and Its Therapeutic Implications

Youness Mokhchani^{1*}, Bouchaib Chafry², Ahmed Salim Bouabid², Mustapha Boussouga²

¹Department of Orthopedic Surgery and Traumatology, Mohammed VI Military Hospital –Dakhla-Morocco

²Department of Orthopedic Surgery and Traumatology, Mohammed V Military Teaching Hospital –Rabat- Morocco

DOI: <https://doi.org/10.36347/sjmcr.2025.v13i11.001>

| Received: 14.09.2025 | Accepted: 27.10.2025 | Published: 01.11.2025

*Corresponding author: Youness Mokhchani

Department of Orthopedic Surgery and Traumatology, Mohammed VI Military Hospital –Dakhla-Morocco

Abstract

Case Report

We report the case of a 58-year-old, right-handed male patient with no significant medical history, who consulted for a progressive, painless swelling of the right hand, evolving for over ten years. The mass had significantly increased in volume over the past two years, leading to significant functional discomfort, difficulty with grasping, and aesthetic prejudice. Clinical examination revealed a soft, lobulated mass, measuring approximately 10 x 8 x 5 cm, covered by healthy skin and immobile relative to deep and superficial planes. Grip strength was diminished. Ultrasound and MRI confirmed the presence of a well-circumscribed lesion, characteristic of a lipoma. The patient underwent complete surgical excision under regional anesthesia. The post-operative course was uneventful, with restoration of hand function and no recurrence after one year of follow-up. Histopathological analysis confirmed the diagnosis of a benign lipoma. This case highlights the importance of precise pre-operative imaging and meticulous surgical dissection for the successful management of giant lipomas of the hand.

Keywords: giant lipoma, benign tumor, hand surgery.

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INTRODUCTION

Lipoma is the most common benign mesenchymal tumor, which can develop in any region of the body where adipose tissue is present. Its location in the hands is relatively rare, accounting for less than 5% of all lipomas. Although usually small and asymptomatic, some lipomas can reach significant proportions, thus becoming "giant lipomas," an exceptionally rare entity at the level of the hand. These voluminous lesions pose unique diagnostic and therapeutic challenges due to the complex anatomy and critical function of the hand. We present here a case of a giant hand lipoma, illustrating the diagnostic approach, surgical management, and post-operative considerations for this rare pathology.

CASE REPORT

A 58-year-old male, a retired construction worker, presented to the traumatology department for a voluminous mass on the right hand. The history of the disease dated back more than ten years, with the initial appearance of a small, painless "lump" on the palm of the right hand. The growth had been very slow and well-

tolerated, but the mass had become bothersome due to a significant recent increase in its volume. Physical examination revealed a large mass (approximately 12 cm in its longest axis), with a soft consistency, non-tender on palpation, occupying the entire palmar surface of the right hand and extending into the 4th interdigital space. The overlying skin was normal, without inflammatory signs. The mass was immobile relative to deep and superficial planes. There was a limitation of thumb abduction and opposition due to the mass effect, with limited finger mobility (notably flexion of the metacarpophalangeal joints and approximation of the 4th and 5th fingers). Digital sensation was intact. Radial and ulnar pulses were palpable (Figure 1).

Standard radiography of the hand showed significant soft tissue enlargement, without lysis or periosteal reaction of the underlying bones. Magnetic resonance imaging (MRI) was performed to characterize the lesion and its anatomical relationships. The sequences confirmed a well-defined lesion, with homogeneous T1 and T2 hyperintensity, with complete signal suppression on fat-sat (fat-saturation) sequences, with slight enhancement of the capsule and intralesional

Citation: Youness Mokhchani, Bouchaib Chafry, Ahmed Salim Bouabid, Mustapha Boussouga. Giant "Crescent-Shaped" Lipoma of the Hand: A Rare Clinical Case and Its Therapeutic Implications. Sch J Med Case Rep, 2025 Nov 13(11): 2663-2667.

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septa, measuring 9.9 x 7.7 x 4.7 cm. The lesion enveloped the flexor tendons and the median nerve in a "crescent" shape; superiorly, it came into contact with the flexor pollicis longus tendon and remained at a distance from the radial artery and the ulnar pedicle (Figure 2).

These features were highly suggestive of a benign lipoma. Despite these radiological confirmations of the mass's benign nature, a biopsy was performed which was consistent with a lipoma (Figure 3).

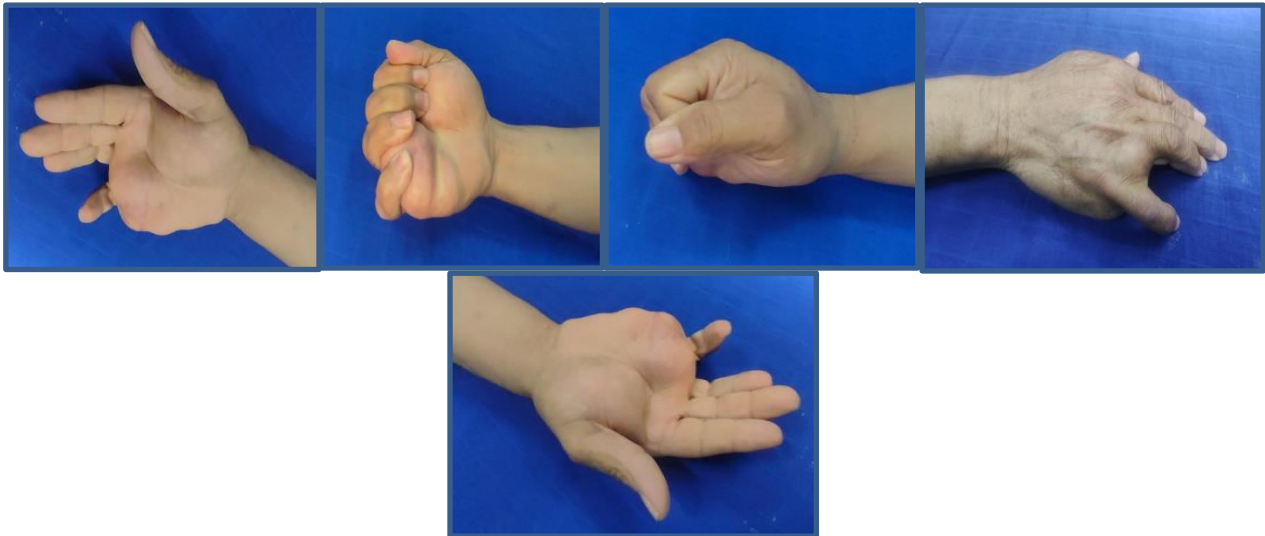


Figure 1: Clinical appearance of the hand

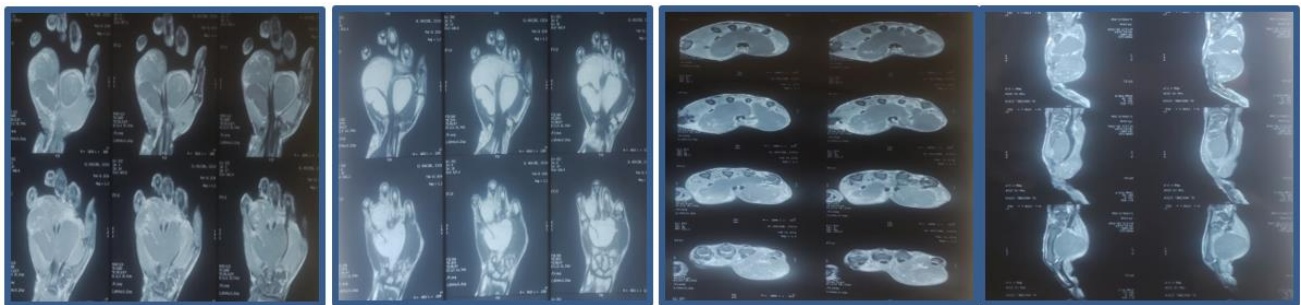


Figure 2: MRI showing the location, volume, appearance and crescent shape of the lipoma



Figure 3: The location of the biopsy

After discussing the risks and benefits with the patient, a decision for surgical excision was made. The procedure was performed under regional anesthesia (axillary block) and with a pneumatic tourniquet. Two curvilinear skin incisions (Z-shaped), carefully planned to respect the skin tension lines of the hand and avoid injury to the sensory branches of the median nerve, were made (Figure 4). Meticulous dissection allowed for the

identification of a fibrous capsule surrounding the fatty lesion. The tumor was progressively dissected from the flexor tendons of the fingers, the flexor pollicis longus tendon, and the neurovascular bundles (Figure 5). The excision was complete. Hemostasis was carefully verified. A layer-by-layer closure was performed over a suction Redon drain.



Figure 4: Location of the two skin incisions



Figure 5: Intraoperative images

The surgical specimen was sent to the pathology department for macroscopic and microscopic analysis (Figure 6). The definitive histopathological

diagnosis confirmed the initial diagnosis, which was that of a benign lipoma.



Figure 6: Resected lipoma

The immediate post-operative course was uneventful, apart from some hand edema that resolved within a few days (Figure 7). The drain was removed at 48 hours. Rehabilitation was started early. At one month post-operatively, healing was complete, thumb mobility

was restored, and post-operative pain had resolved. The one-year follow-up showed excellent functional recovery, patient aesthetic satisfaction, and no signs of clinical or ultrasonographic recurrence.



Figure 7: Appearance of the hand at 48 hours, showing postoperative edema

DISCUSSION

The giant lipoma of the hand is an extremely rare entity [1]. Its definition is not standardized, but it is generally considered "giant" when a lesion exceeds 5 to 10 cm in its largest diameter [2]. Our case, with a size of 10 cm, therefore fits perfectly into this category. The location and "crescent-shaped" appearance are unusual [3]. The clinical differential diagnosis of a soft tissue mass in the hand is broad and can include a ganglion cyst, a fibroma, a giant cell tumor of the tendon sheath, or, more rarely, a malignant tumor such as a sarcoma [4]. In our case, the long evolutionary history, absence of pain, and soft consistency pointed towards a benign lesion [5]. MRI played a crucial role in confirming the diagnosis of a lipoma and, above all, in assessing the anatomical relationships of the lesion [6]. The characteristic T1/T2 hyperintensity with fat saturation is pathognomonic of mature adipose tissue [7], allowing differentiation of a benign lipoma from a well-differentiated liposarcoma, the latter typically showing thick fibrous septa, nodules, or areas of enhancement after contrast injection [8].

The main surgical indication in this case was the progressive functional impairment [9]. Complete surgical excision is the treatment of choice [10]. The technique must be meticulous, aiming for an extracapsular dissection to minimize the risk of local recurrence, which is generally low (less than 5%) for benign lipomas. The preservation of the neurovascular structures of the hand is imperative to maintain finger sensitivity and motor function [11]. Systematic histopathological analysis of the excision specimen is mandatory to confirm the diagnosis and formally rule out malignancy [12]. The favorable post-operative outcome and absence of recurrence at one year are consistent with data from the literature for completely resected benign lipomas [1, 10].

CONCLUSION

This fictional clinical case of a giant hand lipoma illustrates several key points. First, it reminds us that benign tumors, even of very large size, can occur in

the hand. Secondly, it underscores the importance of MRI as an essential diagnostic tool for tissue characterization and pre-operative planning. Finally, it demonstrates that a complete and meticulous surgical excision, respecting the complex functional anatomy of the hand, can yield excellent functional and aesthetic results, with a very low risk of recurrence. Long-term clinical monitoring is nevertheless recommended.

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