

Giant lipomas of the hand

Ahmet Kaya¹, Mustafa Incesu¹, Mehmet Rauf Koc²

ABSTRACT

Objectives: Although lipomas are seen frequently in upper limb they are rarely seen in the hand. In this study we report on 12 patients of giant lipoma in hand. The mean age was 61 years (53-72 years).

Methods: All of the tumors evaluated with plain radiographs, contrasted MRI and tru-cut biopsy under the supervision of multidisciplinary tumour council. There were pinch limitations in the thenar located tumours and were grip limitations in thenar and hypothenar located tumours. In large hypothenar located case, there were hyposthesia in ulnar nerve and hyposthesia in thumb and index finger were observed in thenar located cases. All of the patients underwent marginal excisions. Average dimension of the longest part of the tumours was 5.5 cm. In three cases, neurovascular structures were contiguous to the tumour and careful dissections were applied and tumours were separated from the nerves.

Results: The mean follow up period was 18 months. No post operative complications were detected. At final control there was no evidence of recurrence.

Conclusion: Although the giant lipomas of the hand are barely seen they must be kept in mind for differential diagnosis of tumours of hand.

Key words: Benign tumour, giant lipoma, hand, hypoaesthesia

Introduction

Tumors in the hand originate from the epidermal, connective tissue, nerves and blood vessels. They are examined in three categories as benign, malignant and pseudotumor [1]. Despite it is the most common soft tissue tumour and has wide distribution of location in the body, lipomas are rarely seen in the hand. These tumours appear as case reports or small series in the literature [2]. Generally small growing, solitary, painless

and rubber-like consistent soft tissue mass is present. It occurs three times frequent in women. Frequency of the lipomas in the hand were reported as 1.3 % to 4 % [3-5]. Lipomas in hand is favour to locate in palm. Most of the cases are asymptomatic. It can cause hypoaesthesia with pressure to the nerves [6,7]. Although, malignant degeneration is uncommon and may not be symptomatic, lipomas in the hand are recommended to excise to avoid from diagnostic confusion [2].

Author affiliations : ¹ Department of Orthopedics and Traumatology, ² Department of Hand Surgery, Izmir University of Health Sciences, Tepecik Training and Research Hospital, Izmir, Turkey

Correspondence : Mehmet Rauf Koc, MD, Department of Hand Surgery, Izmir University of Health Sciences, Tepecik Training and Research Hospital, Izmir, Turkey. e-mail: mehmetraufk@hotmail.com

Received / Accepted : October 12, 2021 / December 11, 2021

The aim of the present study is to report our series of giant lipoma in hand and to evaluate the result of surgical treatments.

Patients and Methods

We determined twelve giant lipomas of hand in our institute. Their clinical findings, radiological aspects, operative details and follow-up's were evaluated for present study.

The main complaint was large, long term history, gradually enlarging soft tissue mass. In three of the cases there were some paraesthesia problems. The masses were not tender. There were also some functional limitations in the hand, such as difficulty in pinch and grip, according to enlarged mass.

Seven of the patients were female and 5 were male. 8 of the tumours were located in thenar muscles (intramuscular), 2 of them were located in hypothenar muscles (intramuscular) and 2 were located on the dorsum of the hand subcutaneously.

After the initial evaluation, plain radiographs and contrasted magnetic resonance imagings (MRI) were taken. Adipose tissue density can be detected on direct radiographs. It is seen as a higher density radiolucent mass (Bufalini Sign) (Figure 1).

The patients were discussed in multidisciplinary tumour council. In all cases, tru-cut biopsy were carried out by experienced orthopaedic oncologist. The op-

eration were realised under axillary block anaesthesia and pneumatic tourniquet control by an orthopaedic oncologist and consultant hand surgeon together. The loop magnification was used. The tumours were excised marginally, and care was taken not to damage the neurovascular structures. Pathological examinations were realised by an experienced musculoskeletal pathologist. The patients were observed with frequent intervals in term of postoperative complications or relaps.

Results

The mean follow-up time was 18 months. The mean age was 61 (ranged 53 to 72). The tumour were located in thenar muscles in eight of the cases, two were located in hypothenar muscles and two were located on dorsum of the hand (Figure 2,3,4). There were marked pinch limitations in three thenar located tumours and were marked grip limitations in thenar and hypothenar located four tumours. In dorsal located case, there were some limitations to use of the hand. In one of hypothenar located case, there was hypoesthesia in ulnar nerve and hypoesthesia in thumb and index finger were observed in thenar located cases.

The fat density were detected on plain radiographs. No bone erosion was observed.

The MRI showed well circumscribed high homogenous intense mass on T1-weighted images and intermediate intense on T2 weighted images. On T1 images, the masses had as same intensity as the subcutaneous fat tissue. The fat suppression were confirmed the masses were completely homogenous.

In all cases, tru-cut biopsies were reported as lipoma by pathologist. Consequently, after the operations all of them were confirmed as lipoma.

Soft, yellow-orange colored, lobulated, having some pseudopod large adipous masses with thin capsule delineated from the adjacent muscles were observed in the operations.

The average dimension of the longest part of the tumours was 5.5 cm.

In microscopic evaluation, the tumours were con-



Figure 1. Bufalini sign.



Figure 2. Case 1.

sisted of mature fat cells and having fibrous capsule and some vessels. No doubt of malignancy was observed.

At final control, there was no complaint with the disease and the operation and no recurrence was recorded.

Discussion

In a series of 25 cases, pathology after excisional surgery presents as lipoma in 23 patients, fibrolipomatous hamartoma in 1 patient, and liposarcoma in 1 patient [8]. Lipomas are very common, painless soft tissue masses. They consist of normal fat cells which are en-

capsulated and sometimes lobulated. They may occur in subcutaneous, intramuscular or intermuscular location. Although lipomas are seen frequently in upper limb they are rarely seen in the hand. In the literature there are only case reports and small series about lipomas in the palm [2-5]. Especially intramuscular located giant lipomas which greater than 5 cm are barely seen [9].

Because of the large size of the tumour sometimes they may affect grip and can cause nerve trapment and paresthesia. Other tumors like schwannomas were also

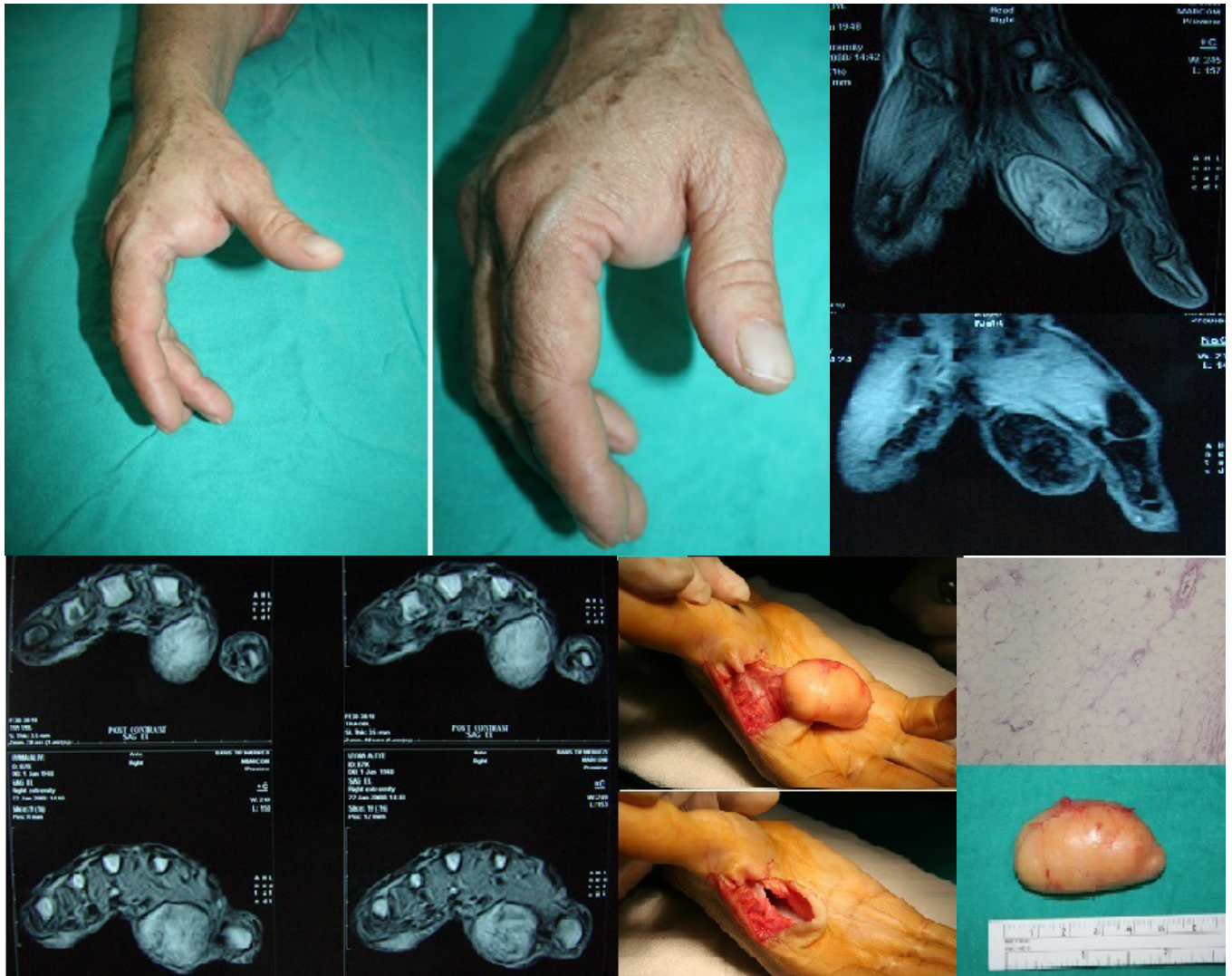


Figure 3. Case 2.

found to have a motor and sensory deficit [10,11]. Differential diagnosis also should be kept in mind. In our patients three of them had hypoesthesia and after the surgery hypoesthesia resolved. We dissected the tumours under the loup magnification and marginal excisions were carried out. It prevented the damaging of the nerves and it may contribute to decrease the tumour recurrence. Marginal excision of lipomas is generally curative. Despite the fact that after marginal excision recurrence may be seen, in our patients there were no recurrence during the follow up period.

Because of the tumours have deep and intramuscular location and large size, especially in older patients,

to avoid from diagnostic confusion the giant lipomas of hand must be excised as soon. If tumour compresses the nerve(s) excision of the tumour prevents permanent nerve damage.

Among the imaging studies, the two most preferred methods are USG (Ultrasound) and MRI (Magnetic resonance imaging). In particular, MRI has a guiding feature for surgical treatment. [12]. MRI is very useful to diagnose the lipomas and to differentiate from the other tumours of hand. It also shows the tumour extending and the relationship between the tumour and the adjacent important structures. In our study MRI results were correlated with tru-cut biopsies.



Figure 4. Case 3.

Although no recurrence was observed in the short term, long-term patient follow-up is an important requirement. After tumor surgery; evaluation of patients in at least 5 years and subsequent follow-ups should be kept in mind as an important parameter [13].

Conclusion

Excisional surgical treatment of soft tissue tumors of the hand and wrist is a surgery that requires attention in terms of recurrence and complications. The absence of recurrence and complications in the patients in our study group, as well as the good satisfaction rates, are the strengths of our study. The short follow-up period should be considered as limitation of our study. Because after tumor surgery; evaluation of patients in at least 5 years and subsequent follow-ups should be kept in mind as an important parameter.

Although the giant lipomas of the hand are barely seen they must be kept in mind for differential diagnosis of tumours of hand.

Conflict of interest statement

The authors have no conflicts of interest to declare.

References

1. Tripoli M, Cordova A, Moschella F. Characteristics, Management Techniques, and Outcomes of the Most Common Soft-Tissue Hand Tumors: A Literature Review and Our Experience. *Ann Plast Surg* 2017;79:558-65.
2. Cribb GL, Cool WP, Ford DJ, Mangham DC. Giant lipomatous tumours of the hand and forearm. *J Hand Surg Br* 2005;30:509-12.
3. Rodriguez JM, Phalen GS. Lipomas in the hand and wrist; diagnosis and treatment. *Cleve Clin Q* 1970;37:201-5.
4. Posch JL. Tumours of the hand. *J Bone Joint Surg Am* 1956;38:517-40.
5. García Ceballos JI, Wylock P. Hand palm and finger lipomas: four case reports and review of the literature. *Euro J Plast Surg* 2005;28:243-6.
6. Boussouga M, Bousselmame N, Lazrak KH. [Lipome compressif de la loge thenar. A propos d'une observation][Article in French]. *Chir Main* 2006;25:156-8.
7. Ersozlu S, Ozgur AF, Tandogan RN. Lipoma of the index finger. *Dermatol Surg* 2007;33:382-4.
8. Ferrando PM, Garagnani L, Eckersley R, Weir J, Katsarma E. Lipomatous tumours of the hand and

- wrist A series of 25 cases and review of the literature. *Ann Ital Chir* 2014;85:587-92.
9. Lee YH, Jung JM, Baek GH, Chung MS. Intramuscular lipoma in thenar or hypothenar muscles. *Hand Surg* 2004;9:49-54.
 10. Erdinc A, Serarslan U, Gultekin A. Median nerve schwannoma: A rare case report. *Hand Microsurg* 2019;8:128-32.
 11. Karaman İ, Öner M, Kafadar İH, Güney A, Argun M. Surgical excision of peripheral nerve schwannomas: analysis of 11 patients. *Acta Orthop Traumatol Turc* 2015;49:139-43.
 12. Agarwal A, Prakash M, Gupta P, Tripathy S, Kakkar N, Srinivasan R, et al. Soft Tissue Masses of Hand: A Radio-Pathological Correlation. *Radiol Res Pract* 2015;2015:752054.
 13. Acar E, Gültekin A. [Short-term Results of Excisional Surgery in Patients with Soft Tissue Tumors of the Hand and Wrist][Article in Turkish]. *Bozok Med J* 2020;10:73-9.

© 2021 Turkish Society for Surgery of the Hand and Upper Extremity. This is an open access article licensed under the terms of the Creative Commons Attribution NonCommercial ShareAlike 4.0 (<https://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, noncommercial use, distribution and reproduction in any medium, provided the work is properly cited.