

## Palmar Lipomas; Different Clinical Presentations

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### ABSTRACT:

#### BACKGROUND:

Lipomas arise as soft tissue tumors almost, every where in the body and follow the distribution of the fat. Those presenting in the hand are uncommon slowly growing masses within the hand spaces..

#### OBJECTIVE:

To highlight the various presentations of large sized lipomas growing in the palm with different clinical pictures.

#### PATIENTS AND METHODS:

Five patients with hand lipomas, ages (7-45) years, presented with palmar swellings, three were diagnosed clinically and two were diagnosed with magnetic resonance. The lipomas were surgically excised under general anesthesia.

#### RESULTS:

Compressive neuropathy was elicited in three patients, one patient had mild motor weakness due to muscle stretching. All patients had marginal excisions, histopathology proved to be lipomas. The paresthesia in three patients improved postoperatively, all patients had full recovery of hand function during the follow up period of one year.

#### CONCLUSION:

The palm has limited spaces, yet lipomas can grow for some time with minimal ill effect, surgical excision is the only remedy.

**KEYWORDS:** giant lipoma, palmar lipomas, compressive neuropathy.

### INTRODUCTION:

Fat is distributed everywhere in the body, which may give rise to slowly growing tumors, titled the "universal tumor", and that is lipomas<sup>[1]</sup>

Clinically these may present as subcutaneous, subfascial, intermuscular, or in other different locations<sup>[2]</sup>. These swellings are usually painless in nature except when growing near a nerve, then these might result in pain or nerve dysfunction<sup>[3,4]</sup>. Lipomas occurring in the hand are usually rare<sup>[5]</sup> but when these grow, there is limited space for their slow growth.

Giant lipomas (GL) (over 5 cm.) could present with nerve compression (ulnar or median nerve)<sup>[6,7]</sup>. The diagnosis is usually made on clinical grounds, besides plain x-ray, magnetic resonance gives an accurate picture of the masses within the spaces of the hand<sup>[8]</sup> and would aid in the planning of the surgical excision.

In this paper we present 5 patients with palmar lipomas (three giant lipomas), with their different clinical presentation and management.

#### PATIENTS AND METHODS:

Data of five patients presenting with large palmar swellings were reviewed, all were diagnosed clinically and radiologically as lipomas.

MRI was done only for deep tumors (two patients), the findings were considered in the surgical planning and the possible extensions of the incisions.

All five patients had marginal surgical excisions under general anesthesia.

#### RESULT:

The patients ages ranged 7-50 years, mean age (37.4 years), details of the patients is shown in table 1.

**Table 1: Patients characteristics and site of lipoma.**

case 1	male	50 years	right hand	thenar space
case 2	male	7 years	right hand	thenar+first web space—GL
case 3	female	40 years	right hand	mid palmar space—GL
case 4	male	42 years	left hand	thenar space
case 5	female	48 years	left hand	hypothenar space—GL

(GL-Giant lipomas, over 5 cm.)

The details of the clinical presentation of the masses besides the swellings is shown in table 2.

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**Table 2 : The associated neurological presentation in relation to the site of the lipomas**

case 1	thenar	no neurological deficit
case 2	thenar+ first web	muscle weakness
case 3	mid palmar	sensory paresthesia, median and ulnar digital nerves
case 4	thenar	sensory paresthesia ,median digital nerves
case 5	hypothenar	sensory paresthesia,ulnar digital nerves

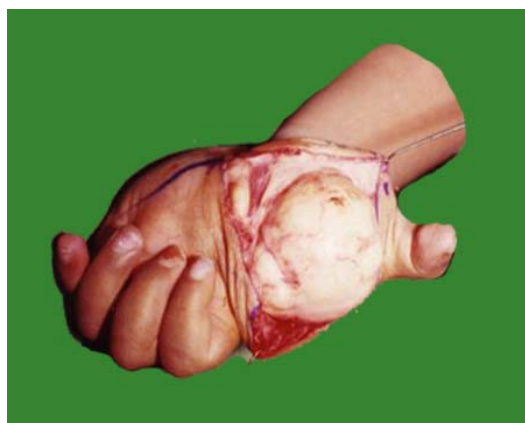
All five patients had marginal excisions ,under general anesthesia, with the application of tourniquet and with the use of loupe magnification.

Intraoperatively,cases (2-3-4-5), had incision and

release of the palmar fascia in order to deliver the lipoma masses. In case( 2) the thenar lipoma was found stretching the thenar and the dorsal interossei muscles (Fig 1).



**A**



**B**



**C**

**Fig.(1): Case-2- A giant lipomas in a seven years old boy.A-the mass filling most of the palm.B- intraoperative findings .C-The excised lipoma measuring 10.5 x 6 cm.**

The transverse carpal ligament was released and the carpal tunnel opened in order to deliver the lipoma in case (4).

All patients had mobilization of the overlying neurovascular structures and none was sacrificed in the procedure.

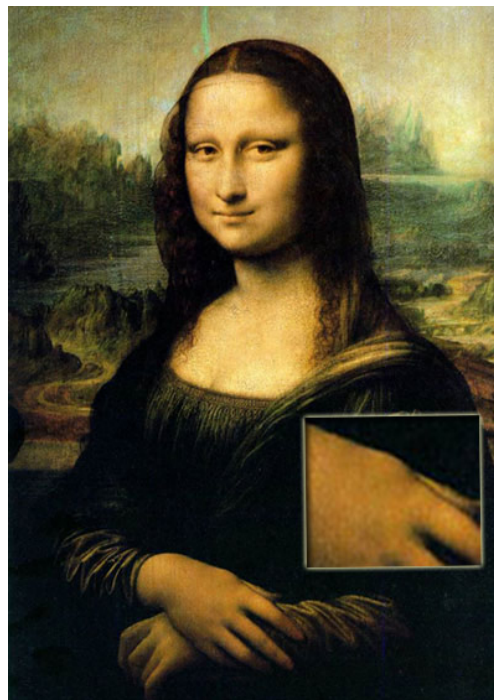
Case (3) had the third lumbrical muscle incised, to allow the delivery of the tumor.

All patients had uneventful postoperative period. While cases (3,4&5) who complained from the paresthesia in the overlying digital nerves, had slow recovery of their complaints within (4-6)

weeks and regained normal sensation. The result of biopsy in all the patients were benign lipomatous tissues. During the follow-up period that ranged (2-24) months, none of our patients showed any signs of local scar hypertrophy or tumor recurrence.

### DISCUSSION:

Although the fact that lipomas in the hand are quite rare the famous artist *Leonardo da Vinci* in his well known painting *Mona Lisa* in the Louver in Paris, has painted a small bumpy well-defined swelling at the dorsum of the right hand suggestive of a subcutaneous lipomas<sup>[9]</sup> (Fig.2).



**Fig 2: Mona Lisa Painting Inset : The bumpy swelling on the dorsum of the hand.**

Several studies have shown that hand lipomas are not so common and especially the giant lipomas<sup>[10,11,5,6,7,]</sup>. In a case series reported by Parvanescu Horia et al, out of 323 tumors in the forearm and hand, only 4 cases had lipomas in the hand<sup>[10]</sup>. Similar numbers are reported in other series<sup>[6,12, 13]</sup>

The site of the tumor usually dictates the clinical presentation, those under the skin will easily be spotted by the patient or the clinician. Yet the subfascial and intramuscular ones have limited space for expansion and these might deceive the examiner<sup>[11]</sup>. These would either compress nerves in the hand affecting the function causing paresthesia

or cause muscle weakness due to muscle stretching and incomplete tendon excursion, thus result in a weak hand grip as in case -2-. Fig 1. Very rarely lipomas might present with acute nerve compression caused by interstitial hemorrhage that will press on the nearby nerve<sup>[14]</sup>. In our series of 5 palmar lipomas, the diagnosis was obvious in most of the cases.

One lady (case 3) had her complaint as a swelling on the dorsum of the hand and the magnetic resonance imaging revealed hyperintense well defined soft tissue mass protruding between the 4<sup>th</sup>, and the 5<sup>th</sup>. metacarpal bones, Fig.(3).

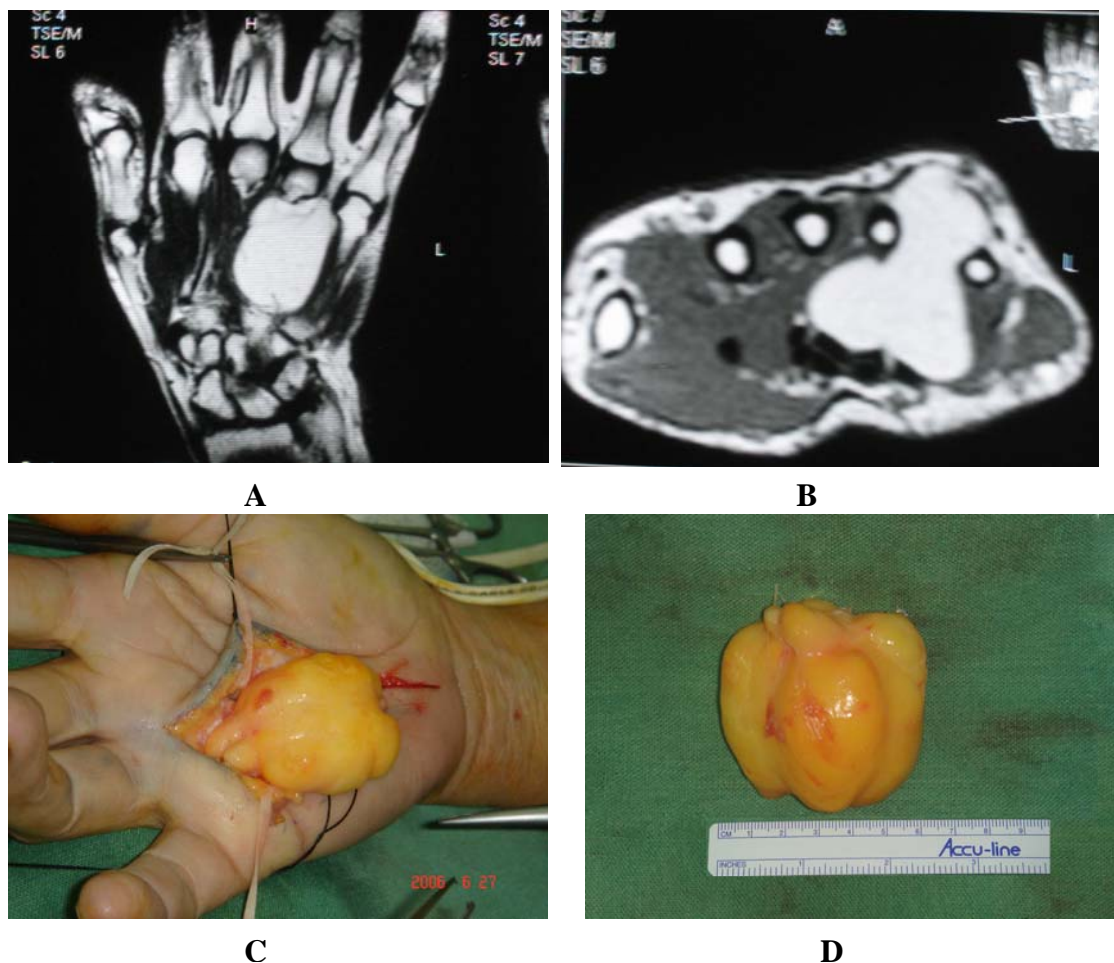


Fig.(3): Case-3:-A&B:MRI scan showing the relation of the tumor in the midpalm , the mass presenting on the dorsum of the hand. C&D:Intraoperative findings and the removed specimen.

As mentioned earlier –table 2- none of the patients had actual nerve paresis but rather hypoesthesia that recovered postoperatively. The stretched muscles regained their power in few weeks time as patients used their hands during the daily life activities which seems to be the best physiotherapy.

It is essential in the surgical approach to design the incisions in a pattern that can be extended with consideration of good exposure and avoiding palmar scar contraction in the healing phase. The release of deeper structures such as palmar fascia or transverse carpal ligament should also be considered according to the extent and the depth of the mass being dealt with. All our patients had marginal excision which seemed to be appropriate to remove the tumors, and fortunately the histopathological exam in all of specimens proved to be benign adipose tissue, this is essential to perform as there are reports of malignant

transformation of simple lipomas to liposarcomas<sup>[15]</sup> or liposarcoma arising de-novo in the hand<sup>[16]</sup>.

#### CONCLUSION:

It is important for the hand surgeon when treating hand swellings to consider the possibility of a lipoma in the differential diagnosis and especially if there is an associated nerve dysfunction. After confirming the diagnosis, meticulous surgery is usually curative.

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