

# Lipoma of the ring finger in a young female: case report and review of literature

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## ABSTRACT

Lipomas are benign, mesenchymal neoplasms occurring in areas of abundant adipose tissue. They can be found anywhere in the body with approximately 15-20 % located in head and neck region and the majority of rest in the shoulder and back. They are uncommon in hand and even rare in fingers. We report a case of lipoma in 22 year old female who presented to us with a painless swelling. Surgical excision was done. Lipoma should always be kept in the list of differential diagnosis. Complete resection should be done to prevent recurrence.

**KEY WORDS:** Lipoma; Lipomatosis; Phalanx

## INTRODUCTION

Lipomas are benign, mesenchymal neoplasms occurring in areas of abundant adipose tissue [1]. They can be found anywhere in the body with approximately 15-20 % located in head and neck region and the majority of rest in the shoulder and back [2]. They are not very common in the hand and those involving the fingers are very rare, with reported incidence of 1% [3]. The first patient reported with lipoma of the finger was by Stein in 1959 [4]. Since then few cases have been reported with majority in the index finger [5]. We present a case of lipoma over middle phalanx of ring finger of left hand in a 22 year old female.

## CASE PRESENTATION

A 22 year old female presented to the orthopedic department in our institution with swelling in the ring finger of her left hand of fifteen months duration. She first noticed the swelling fifteen months back when it was 0.5x0.5 cm in size. The swelling increased progressively to its present size. She was advised surgical excision by a private practitioner nearby, however she presented to our hospital because of financial constraints. There is no history of trauma prior to the development of the swelling.

On examination, the swelling of size 3x3 cm was present on the volar aspect of left ring finger over middle phalanx. The swelling was non tender, soft, appeared to be arising from flexor tendon sheath. The skin overlying the swelling was normal. The terminal flexion of the both Proximal interphalangeal joint (PIP) and Distal interphalangeal joint (DIP) joint was restricted. There was no distal neurovascular deficit in the ring finger. There was no swelling in other fingers or elsewhere in the body.

Radiographs suggested increase in the soft tissue shadow over ring finger without any bony changes (Fig1). FNAC of the swelling was done and was suggestive of lipoma.



**Fig 1.** X rays of hand AP and Oblique views showing increase in soft tissue shadow on volar aspect of ring finger over middle phalanx

The patient was planned for surgical excision. The patient was positioned supine and was given interscalene nerve block in the affected extremity. Tourniquet was applied to create bloodless field during surgery. A Mid lateral incision was given over the middle phalanx starting from PIP joint to DIP joint (Fig 2). The neurovascular structure were identified and preserved carefully. On further dissection, it was found preoperatively that the lipoma was arising from the tendon sheath. Complete excision of the lipoma was

done (Fig 3). Post-operative period was uneventful. There was no distal neurovascular deficit post operatively. Biopsy of the lesion showed mature adipose cells containing few capillaries within thin fibrous strands. The findings were consistent with lipoma. Patient has been asymptomatic after one year follow up.



Fig 2. Showing site of incision



Fig 3. Showing cut section of tissue excised

## DISCUSSION

Lipomas are the most common soft-tissue tumor composed of adipose tissue [6]. The most common age of presentation is in the fifth and sixth decade. They account for approximately 16% of soft tissue mesenchymal tumors [5]. Although the histological appearance resembles mature adipose tissue, Lipomas are not derived from mature adipocytes but rather from mesenchymal preadipocytes [7]. They are slow growing tumors with lobulated masses enclosed by a thin, fibrous capsule. Histologically they are composed of mature fatty tissue where the central lipid droplet and peripherally located nucleus forms the characteristic signet ring cell [1].

There are various subtypes of lipomas which contains a heterogenous mixture of other mesenchymal derived tissues [8]. These include the following: lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma, angioliipoma, myoliipoma of soft tissue, chondroid lipoma, spindle cell/pleomorphic lipoma and hibernoma. Benign lipomatous lesions affecting bone include intraosseous lipoma, parosteal lipoma and liposclerosing myxofibrous tumor. Benign lipomatous lesions may also affect joints and tendon sheaths, either focally as in our case report, or more commonly diffusely (lipoma arborescens).

In the hand, these tumors may be superficial; arising from the subcutaneous tissues and or less commonly may be subfascial, arising deep in the palm within the Guyon canal, the carpal tunnel or the deep palmar space [9, 10] and generally being of bigger size [11]. In some cases, they may arise from juxta-articular regions or adjacent to the periosteum (parosteal lipoma), they may erode into the bone and cause focal cortical hyperostoses, osseous projection, subperiosteal new bone formation and bowing of the bone [12,13].

Clinically, lipomas of hand are asymptomatic, soft, non tender, mobile mass causing only mechanical restriction to joint movement if they are juxta-articular. They can cause pain and distal sensory changes and motor weakness if they are present around neuro vascular structures [13]. They can also cause scalloping effect on bones because of their large size.

Radiological evaluation is diagnostic in up to 71% of cases [14]. Computed tomography and especially magnetic resonance imaging are helpful in the assessment of such lesions. The MR images reveal of such lesions reveals tissue that is isointense relative to subcutaneous fat, regardless of pulse sequences. When contrast is applied, the mass does not enhance except for its capsule. In 37-49% of cases CT or MR images reveal intrinsic thin septa (< 2 mm), a sign that is considered almost pathognomonic for the diagnosis of lipoma [15]. However, in our case we could not get MRI done due to financial constraints.

In our case the lipoma occurred in third decade as opposed to fifth and sixth decade where it commonly occurs. We made differential diagnosis of lipoma along with GCT tendon sheath, Ganglion cyst, Xanthomas, Myxomas. The diagnosis of lipoma was confirmed by Biopsy report. Surgical excision is the treatment of choice as was done in our case. Most of the cases of lipomas have been reported in index finger as opposed to ring finger in our case.

## CONCLUSION

The occurrence of lipoma in hand is rare. This should always be kept in list of differential diagnosis of swellings in hand. For early diagnosis and optimal management complete radiological examination including MRI of the affected hand should be done to differentiate lipoma from other swellings

if possible. However, in developing countries ultrasound can also be used as a tool along with x rays to detect lipomas where MRI facility is not easily available. Complete resection of lipoma should be done as they tend to recur in around 5% cases.

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