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Lipomaof the Ring Finger- A Case Report

KEYWORDS: hand lipoma, lipoma of finger

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ABSTRACT *Introduction*

Lipoma, the ubiquitous tumor, is uncommon in the hand and rarest in the finger. There are few reports on Lipoma found in the index finger, even fewer on Lipoma of the long finger and no report on subcutaneousLipoma of the ring finger.

We report a case of a thyroid shaped subcutaneousLipoma of the ring finger of the dominant hand, the only case reported in World literature.

Case presentation

A 35-year-old Indian lady presented with a Lipoma of the right ring finger. Except for the presence of a swelling she had no complaints at rest or while working. Treatment was surgical excision of the Lipoma. There has been no recurrence for two years.

Conclusion

Lipoma of the fingers are rare entities. More often, than not, in the fingers, Lipoma do not cause any compression symptoms. Theirawareness is imperative in the differential diagnosis from other soft tissue tumors.

Introduction

Lipoma is 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 the head and neck region and the majority of the 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 a Lipoma of the finger was by Stein in 1959 [4] and since then, 14 cases were identified in the literature that concerned Lipoma case reports of the fingers [5]. Of those, totally 3 were on the index finger, 2 cases occurring distal to the right proximal interphalangeal joint [6] and 1 case to the left index finger [7], all of them posttraumatic in nature. We present a case of thyroid shaped sub-cutaneous Lipoma over the proximal phalanx of the right ring finger.

Case presentation

Thirty five years old female patient presented with a swelling in the right ring finger of five years duration. She was a right hand dominant home-maker without any history of smoking.

She first noticed the swelling on the palmar aspect near the base of the ring finger about 1 x 0.5 cms in size which progressively increased to present size. She had no complaints of pain, sudden increase in size,secondary changes in the swelling , paresthesias,vascular complaints,limitations of joint movements.

No swellings in other fingers or elsewhere in the body.

Clinical examination revealed a butterfly shaped swelling occupying the volar and dorsal aspects of proximal phalanx of ring finger of the right hand.vertically extending from 1 cm distal to the distal transverse palmar crease till the PIP crease. It was a soft, mobile swelling well above the plane of the tendon sheath without any features of neurovascular compression or limitation in range of movements. A working diagnosis of extra-synovial Lipoma was made.

Fig 1: location of tumor

Radiology revealed no bony involvement.

Soft tissue ultrasound revealed the swelling to be above the tendon sheath.

FNAC showed evidence of Lipoma.

Patient was planned for surgery under transaxillary block with tourniquet control.

A volar zig zag incision was made and the entire swelling was excised in toto. Operative exploration revealed a sub-cutaneous thyroid shaped Lipoma, curving on either side of the volar surface of the finger, explaining its near circumferential extension. Both the neurovascular bundles were identified and preserved. Post operative period was uneventful. Biopsy confirmed the clinical diagnosis. One year follow up revealed no recurrence and full range of movements of all joints.

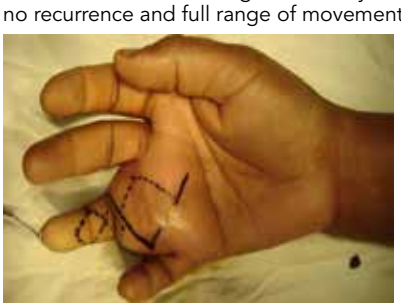

Fig2 :Planned incision

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Fig3: After excision of tumor

Discussion

Lipoma appears mostly in the fifth and sixth decade and probably is the most common solid cellular hand tumors. They are seldom seen in the hand and are extremely rare in the digits [1]. Lipoma is benign soft tissue tumors accounting for approximately 16% of soft tissue mesenchymal tumors [5]. Although the histological appearance resembles mature adipose tissue, Lipoma are not derived from mature adipocytes but rather from mesenchymal preadipocytes[16].

Indeed, some variants of Lipoma contain a heterogeneous mixture of other mesenchymally derived tissues. Related benign mesenchymomas include the following: fibrolipomas, which contain abundant fibrous tissue; angiolipomas, which are composed chiefly of mature adipocytes within extensive narrow vascular channels that contain fibrin microthrombi; chondrolipomas, which contain cartilaginous and lipomatous elements; myxolipomas, in which areas of mucoid mesenchymal tissues are intermixed with mature fat; myelolipomas, which contain adipocytes and hematopoietic tissue; and ossifying Lipoma, which show osseous changes without a connection to bone.

Most often found in subcutaneous fascia, lipomatous neoplasms occasionally occur in deeper layers. Development typically begins with an initial insidious growth period followed by a prolonged and latent maintenance state [17].

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]. Finally, in few 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].

These lightly encapsulated tumors are composed of mature fatty tissue where the central lipid droplet and peripherally located nucleus forms the characteristic signet ring cell [1]. Clinically, superficial lipomas commonly appear as asymptomatic, slow growing, soft fluctuant, and bulging, lobulated and mobile mass. Unless they lie in canals commonly associated with nerve compression, they cause pain and distal sensory changes and motor weakness [13]. Because of their enlarging size, they may lead to limitation of mobility and impairment of grasping. Lateral deviation of the fingers also may be present when the tumor arises around the metacarpophalangeal joints. Most often presenting as a solitary mass, hand lipomas are often asymptomatic and only come to clinical attention when they are of cosmetic concern or become large enough to create mechanical impairment. In Leffert's series of 141 lipomas of the upper extremity,109 tumors were asymptomatic and excised solely for aesthetic reasons. Of the 32 symptomatic lesions, 26 caused pain or tenderness, and 6 produced paresthesias or sensory deficit secondary to nerve compression. Similar symptomatic presentations have been documented extensively in the literature. Lipomas that restricted range of motion and deformed the wrist or digits, decreased grip strength, or caused muscle paralysis, polyarthritis, trigger finger,dysesthesias,muscle atrophy,and nail plate dystrophy and thinning have been reported[18].

Clinical evaluation of superficial lipomas is accurate for diagnosis in up to 85% of cases [14], contrary to deep lipomas for which clinical evaluation indicates only a nonspecific mass.

When subcutaneous, diagnosis can be made by a characteristic "doughy" feel on palpation. Application of an ice pack to the tumor to chill and harden the fat has also been used to aid in diagnosis[18].

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]. The main imaging criteria used to differentiate those lesions from their malignant counterparts, liposarcomas, are the absence of septa in most of the cases, the presence of mineralization areas best depicted with CT and the absence of interdigitations with skeletal muscle, a feature described only in intramuscular lipomas [14].

Lipomas arising from the deep palmar space tend to present in the periphery of the hand because of the unyielding nature of the overlying palmar aponeurosis. Diagnosis in the hand and digits can be difficult, because of their rarity and deeper location. The differential diagnosis as mentioned, includes other soft tissue tumors such as ganglion cysts, giant-cell tumors, myxomas, angiolipomas and intraneural lipofibromas [7]. Occasionally, lipomas of the hand may be difficult to differentiate from ganglion cysts by palpation. Ganglion cysts allow passage of light on transillumination while lipomas do not[19].

Careful dissection is necessary during the surgical procedure in order to avoid recurrence. Recurrence after marginal excision is less than 5%. Surgical dissection and removal of the neoplasm was performed with no post-operative complications and is the treatment of choice[16]

In our case the tumor located subcutaneously, with near circumferential extension. Clinical diagnosis was confirmed with histological examination. Histological examination showed a yellowish, lobulated swelling of 5.5 x 8.0 cms in the largest dimension, made of mature adipocytes.the lipoma was unique in the following ways- age of occurrence(younger than average of fifth decade),ring finger involvement,massive size and its unique thyroid gland like shape. No complications occurred during the postoperative period while the patient achieved full range of motion. There were no sings of recurrence after a follow-up of 24 months

Conclusion

Lipomas of the fingers are rare entities. more often, than not, in the fingers, lipomas do not cause any compression symptoms. their awareness is imperative in the differential diagnosis from other soft tissue tumors.

Literature reports of cases of lipomas of the index and long fingers; single report of ring finger distal phalanx lipoma, but there are no reports on thyroid shaped sub-cutaneous lipoma of the ring finger of the dominant hand.

Competing interests

The authors declare that they have no competing interests or financial gains.

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