Glomus Tumour: Uncommon Entity But Commonly Remain Undiagnosed

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Abstract

Glomus tumor is a benign and vascular hamartoma that originates from the neuromyoarterial cells of the normal glomus apparatus in the reticular dermis. It accounts for 1–5% of soft tissue tumors of the hand. This tumor typically presents with cold hypersensitivity, pain, tenderness, and sometimes nails deformities or nail discoloration. Although the precise cause of glomus tumors is unknown. We report an atypical case of a patient with painless glomus tumor.

Keywords: *Glomus Tumour, neuromyoarterial cells, hamartoma.*

Introduction

Glomus tumor are rare tumor of hand.[1] Originating from neuromyoarterial cells of normal glomus apparatus in reticular dermis they are the benign and vascular hemartoma.[2] It accounts for 1 to 5 percent of total soft tissue tumor of hand[3] Commonly presenting in hand [5] of which 90 % are located in subungal tissue of fingers[6] . It can occur at any age but commonly seen in 3rd to 5th decade of life[7] . Pain, point tenderness, cold hypersensitivity is the classical triad, Clinically commonly presents as solitary blue or purple nodular lesion .

Case Presnetation: 35 years female came with the complaint of pain in the left distal ring finger for the last 6 years which aggravated in the winter season. The patient visited multiple specialists but the pain was partially relieved by pain-relieving drugs. Before consulting us she was being treated for Reynaud's phenomenon by a physician with no relief in symptoms. History of paroxysmal pain exacerbation during cold exposure and tenderness with bluish discoloration. On clinical examination there was severe pain when pressure was applied over the proximal nail (love's sign was positive), On careful examination, the proximal nail was bluish and there was fullness near proximal nail fold and the angle was obliterated but the nail plate was not deformed.

On nail ultrasonography, a small well defined hypo echoic shadow was present in the proximal nail bed. MRI study of left ring finger reveals-well defined elongated homogeneously enhancing soft tissue lesion in the subcutaneous plane over the dorsal aspect of the ring finger in the shaft region of distal phalanx (Fig 2) and differentials of Glomus tumor and tendon sheath Giant cell tumor were kept. We considered differentials of glomus tumor, hemangioma, arteriovenous malformation, tendon sheath tumor. We performed therapeutic as well as a diagnostic biopsy. Under all aseptic precaution and ring block procedure was performed. The first eponychium was lifted and retracted backward than the nail plate was removed then using a 5mm biopsy punch, the bluish mass was excised. Histopathology finding was suggestive of glomus tumors. The patient was called after 7 days to look for any complications. Two months post-procedure there was partial regrowth of nail plate and there were no complaints of pain or tenderness. Excised tissue was sent for histopathology examination which shows feature suggestive of glomus tumor.

Figure 1–Glomus tumor at left ring finger showing fullness near proximal nail fold

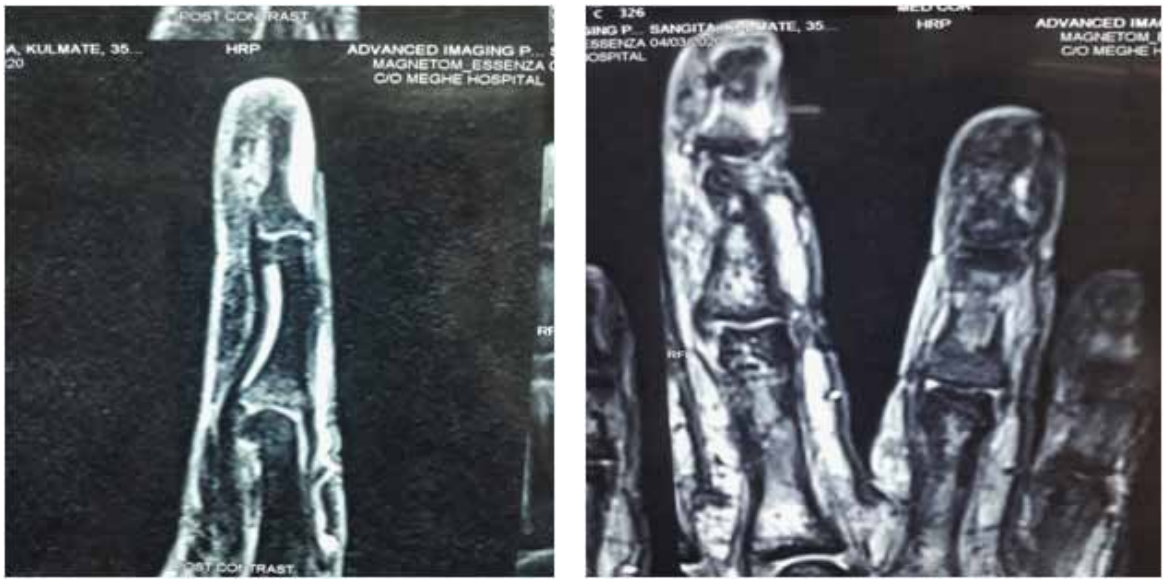

Figure 2–MRI showing well defined elongated homogeneously enhancing soft tissue lesion in the subcutaneous plane

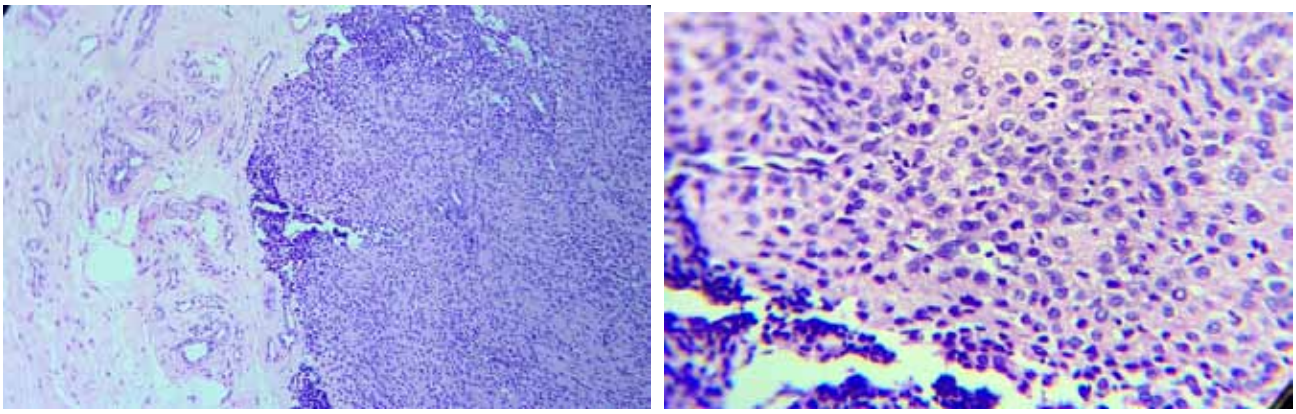

Fig 3a – 10x resolution Fig 3b – 40x resolution

Figure 3–Photomicrograph showing well-circumscribed dermal tumor composed of glomus cell

Figure 4–Nail plate removed with 5 mm biopsy punch

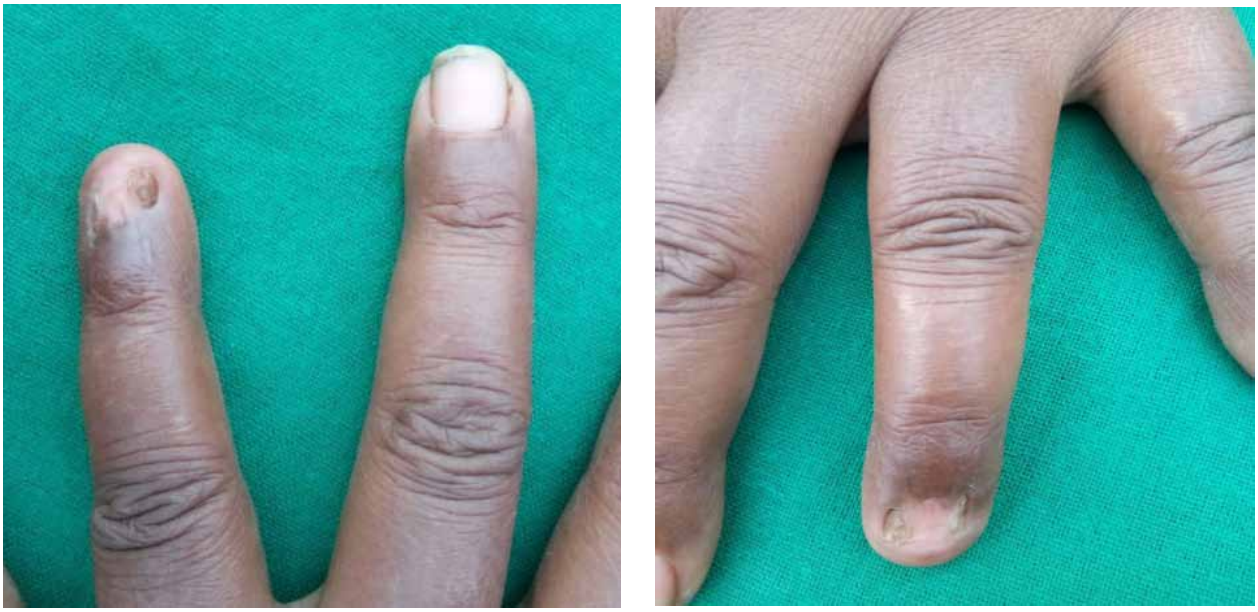

Figure 5–Post Operative Image After 2 Months

Discussion

Benign vascular hamartoma containing neuromyoarterial cells of normal glomus apparatus is known as a glomus tumor.[2] Glomus body comprises an afferent arteriole, an anastomotic Suquet–Hoyer canal, an efferent venule, the intraglomerular reticulum, and its capsule. The Suquet–Hoyer canals are lined by endothelial cells, which are surrounded by smooth muscle cells[8-10]. Interspersed in the smooth muscle are the large cuboid glomus cells. Their primary function is thought to be thermoregulation.[15]

Glomus bodies are therefore composed of three main structures: glomus cells, the vasculature, and smooth muscle cells. Glomus tumor is a result of hyperplasia of any of this structure. Accordingly, they can be classified as a solid glomus tumor, it is most

common and accounts for 75 % cases, a glomangioma (20%), and glomangiomyoma which is the rarest that is only 5 % cases. Other variants of the glomus tumor are glomangiomatosis and malignant glomus tumors.[14]

The etiology of glomus tumor is unknown but sex, age, trauma or inheritance could play a role, familial variant had been linked to chromosome 1p21-22[3] Young adults, mostly women are primarily affected[10] In hand fingertips and pulp are most common site [11] Commonly presents as small, slightly, raised, bluish or pinkish-red, painful nodule which when subungual located can lead to elevated, deformed and discolored nail[3]

Severe lancinating pain, extreme pain on touch, and intolerance to change in temperature is the classical triad for glomus tumor[12], our case had all the features of the classical triad. The diagnosis of glomus tumor should involve positive results for Love's test, Hildreth's test, and Cold hypersensitivity[5] all these tests were positive in our case.

Though diagnosis can be made on the clinical ground imaging modalities like X-ray, ultrasonography, and MRI can help in confirming the diagnosis. MRI and Ultrasound are valuable tools visualizing and diagnosing glomus tumor and ruling out other possibilities. Cortical thinning or erosive changes in adjacent bones are common radiographic findings. Ultrasound helps know the size, site, and shape of the tumor, in our case small well defined hypoechoic shadow was seen.[3] MRI shows typical characteristics of glomus tumor-like low signal intensity on T1-weighted images, marked hyperintensity on T2-weighted image & enhancement on T1-weighted images after gadolinium injection, MRI in our case reveals 8.0 x 3.1 x 4.7 mm well defined elongated homogeneously enhancing soft tissue lesion in the subcutaneous plane over the dorsal aspect of a finger in the shaft region of distal phalanx [FIG 2] Angiography and color Doppler are among the other imaging modalities.

Histopathological findings of glomus tumor include glomus cell, blood vessel smooth muscle, and in our case well-circumscribed dermal tumor composed of glomus cell with a round to oval basophilic nucleus and scanty eosinophilic cytoplasm was seen adjacent to blood vessel. (Fig 3).

Complete surgical excision is the treatment of choice for glomus tumor, complete excision of the tumor was done under local anesthesia . There was no recurrence of tumor even after 4 months post-surgery and the patient was free from local site pain during follow up period. We aimed to emphasize by detailed history, proper physical examination along with classical finding on MRI imaging we can significantly decrease the mental agony and improve the surgical outcome of patient suffering from glomus tumor.

Ethical Clearance: Taken from institutional ethics committee.

Source of Funding: Self.

Conflict of Interest: Nil.

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