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(CASE REPORT)

Subungal glomus tumor of thumb with diagnostic imaging findings: A case report

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Abstract

Glomus tumors are rare, benign perivascular hamartomas arising from glomus cells occurring most frequently at the finger tips but can also occur anywhere else in the body. The tumor occasionally shows triad of symptoms of pain, cold sensitivity and pain following minor trauma. Diagnosis is confirmed by histology and complete surgical excision is necessary to prevent recurrence. We report a case of subungal glomus tumor of thumb with medical history and diagnostic MRI findings.

Key words: Case report; Glomus; Pain; Subungal; Tumor

1. Introduction

The glomus tumor is a rare benign neoplasm that arises from the neuroarterial structure called a glomus body accounting for 1-4.5% of all hand tumors. The average age at presentation is between 30 to 50 years, although it can occur at any age.[1] The tumor shows characteristic triad of symptoms as local pain, cold sensitivity and severe pain following minor trauma.[2]

The tumor is usually less than 1 cm in diameter, somewhat elliptical in shape, reddish-purple in color. Microscopically the vascular channels are lined with a single layer of endothelium. These channels are supported by a fibrous tissue layer surrounded by cuboidal cells which are called "glomus cells. "[3]

Glomus tumors occur most frequently on the hand, especially in the subungual area, where glomus bodies are in high concentration. The dermis of the nail bed is richly vascularized. The blood vessels are arranged longitudinally and display numerous glomus bodies, which are encapsulated arteriovenous anastomoses involved in the physiological control of peripheral blood flow in relation to temperature. The normal function of glomus cells is to regulate blood flow in capillaries in response to changes in temperature.[4]

Glomus tumors can also occur in the lung, stomach, pancreas, liver, gastrointestinal or genitourinary tract.[5]

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2. Case report

We report a case of 62 years old female patient presenting in the out-patient department of dermatology with chronic pain and swelling over distal part of left thumb. The pain started 3 years prior to presentation with gradually worsening in frequency and severity. The patient also reported cold sensitivity in that region. There was blue discoloration of the subungual region and deforming ridges on the thumb nail.

X-ray films of hand showed slight erosion of anterior cortex of the distal phalanx [Figure 1]. The laboratory investigations were within normal limits.

MRI revealed small lobulated altered signal intensity soft tissue lesion measuring 1.3 × 0.6 cm in the dorsal aspect of distal phalanx of thumb which is subungal in location causing scalloping of the anterior cortex of the distal phalanx with adjacent bone marrow and inflammatory changes. [Figure 2 and 3]

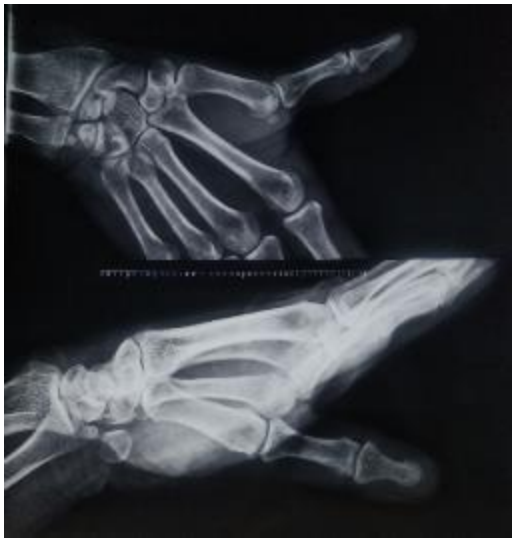

Figure 1 X Ray showing erosion of anterior cortex of the distal phalanx

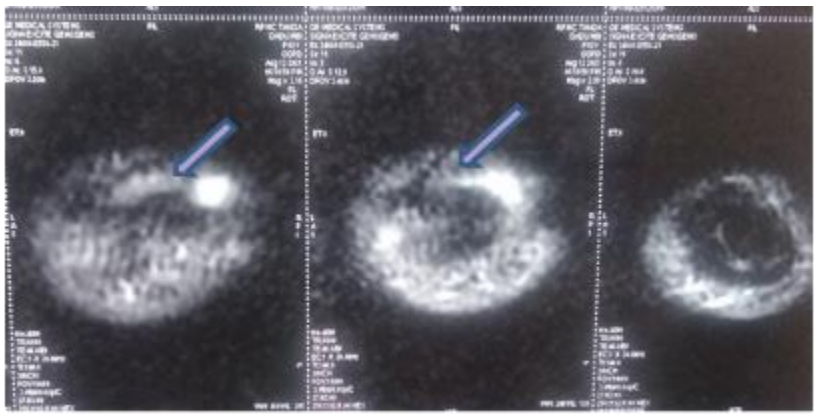

Figure 2 MRI showing soft tissue lesion in the dorsal aspect of distal phalanx of left thumb

The diagnosis of subungal glomus tumor was made based on clinical history and MRI findings.

Surgical excision was performed under local anaesthesia with torniquet application. Sharp incision was made centrally along with partial nail avulsion revealing a fleshy, pink soft tissue tumor of 5 mm of diameter in the nailbed [Figure 4]. The tumor was well circumscribed and was removed intact. Curettage was done to clear the nail matrix area [Figure 5].

Histopathology examination confirmed the lesion to be glomus tumor. It was well encapsulated consisting of solid sheets of glomus cells surrounding the vascular channels forming perivascular sleeves. The cells formed islands with intervening myxoid stroma.

At follow up, the patient reported complete relief of her symptoms.

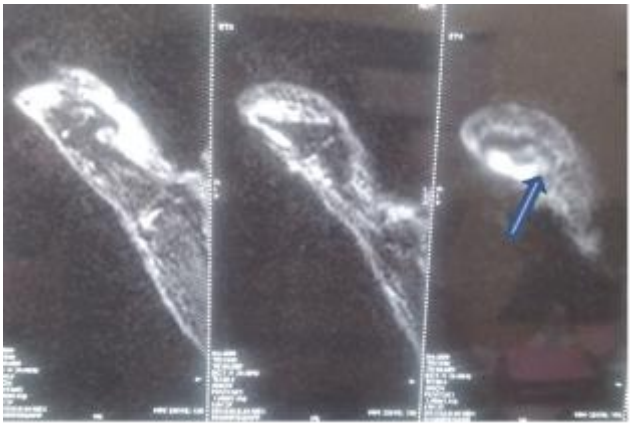

Figure 3 MRI showing soft tissue lesion in the dorsal aspect of distal phalanx of left thumb

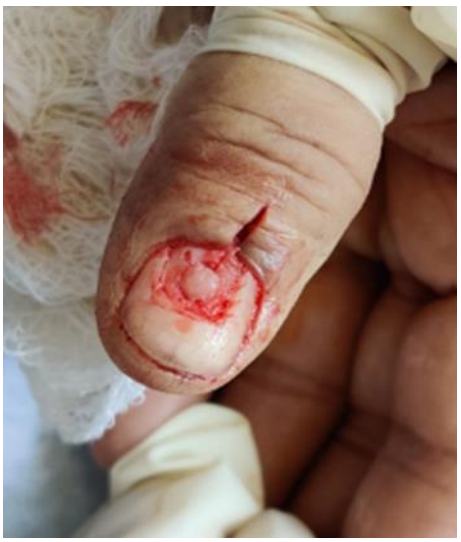

Figure 4 Partial nail avulsion revealing a fleshy, pink soft tissue tumor

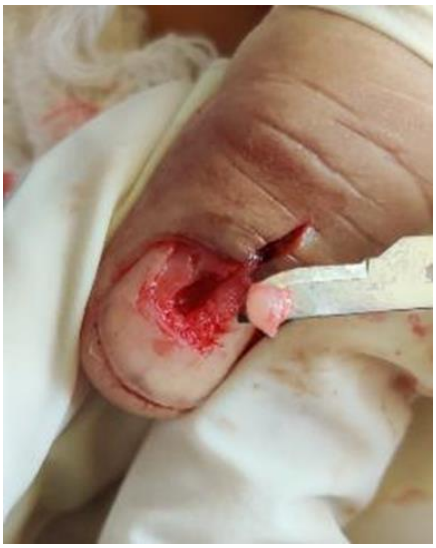

Figure 5 Subungal glomus tumor was removed intact

3. Discussion

The glomus tumor was first described by Wood [6] in 1812 as a "painful subcutaneous nodule" characterized by hypersensitivity to change in temperature; intermittent severe pain and symptoms of long duration.

Rettig and Strickland [7] reviewed eight cases of glomus tumor of the digits seen during an 8-year period that comprised 1.2% of all hand tumors encountered. Six of the eight tumors (75%) in this series were subungual with common symptoms of cold intolerance and worsening pain.

Glomus tumor is a vascular entity, reflecting typically dark on T1 and bright MRI appearance on T2 weighted images as seen by David H Kim [8] in a 46 year-old female patient with history of pain at the tip of left thumb. MRI helps in localisation of tumor and thus planning for surgical excision accurately.

A similar case of subungal glomus tumor was observed by Bordianu and Zamfirescu [9] in a female surgeon with confirmatory MRI findings. They performed Immunohistochemical staining that demonstrated positivity for smooth muscle actin (SMA) and CD34. KI-67 (index of proliferation) was found positive in approximatively 2% of the tumor cells.

4. Conclusion

The glomus tumors are rare and difficult to detect owing to their small size and slow growth rate but the diagnosis can be made by complete history of symptoms and MRI findings. Planned surgical removal of tumor is vital for the complete resolution of symptoms and to prevent recurrence.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to disclosed.

Statement of informed consent

Written informed consent was obtained from the patient for study & data publication.

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