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Case Report

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GLOMUS TUMOR OF FINGER: A CASE REPORT

Dr. Mukesh Kumar[1], Dr. Kapil Negi[2] and Dr. Ramesh Kaundal[3]*

[1]MS General Surgery, Medical Officer, Regional Hospital Bilaspur (HP).
[2]MS General Surgery, Medical Officer, DDUZH Shimla (HP).
[3]MS General Surgery, Medical Officer, Civil Hospital Theog (HP).

***Corresponding Author: Dr. Ramesh Kaundal**

MS General Surgery, Medical Officer, Civil Hospital, Theog (HP).

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ABSTRACT

Glomus tumors present as painful lesions, most commonly in the fingertips. These can present to outpatient clinics of multiple specialties. There is a long duration of symptoms before correct diagnosis and treatment. Treatment is complete surgical excision. Early diagnosis of glomus tumors is important to avoid lengthy treatment delays, chronic pain, disuse syndromes and psychiatric misdiagnoses. We report the diagnosis and successful surgical management of a case of a glomus tumor over the distal phalanx of right index finger in a 50 year old male patient.

INTRODUCTION

Glomus tumors are rare benign neoplasms arising from the glomus body. They commonly develop in the upper extremities, most frequently subungual areas. Up to 75% occur in the hand, and approximately 65% of these are in the fingertips, particularly in the subungual location.[1,2] They can be either solitary or multiple. Most typically they present as small, round, bluish nodules visible through the nail plate with a classic triad of symptoms: hypersensitivity to cold, heightened pinprick sensitivity and paroxysmal pain. Diagnosis is done with multiple imaging tools such as X-ray, magnetic resonance imaging, and ultrasonography. However, only histology can confirm the diagnosis. Complete surgical excision of the tumor is the only effective treatment to achieve pain relief and low recurrence rate. Recurrence is common following incomplete resection. Possibility of glomus tumor should be kept in mind among the patients presenting with painful digital nodules.

CASE REPORT

A 50-year-old male from Bilaspur district of Himachal Pradesh presented with a 5 years history of a nodular swelling over the dorsomedial aspect of the distal phalanx of his right index finger. There was history of progressively intense pain, cold sensitivity and severe tenderness to palpation. There was no previous history of trauma. The pain increased when his digit was exposed to cold. Furthermore, the tip was excessively sensitive to touch, and the pain increased at night.

He had visited local hospital multiple times and taken medication but there was no definitive diagnosis and no symptoms relief.

A clinical examination showed a nodular swelling of size 1.5 x 1.5 cm, bluish in color, firm in consistency over the dorsomedial aspect of the distal phalanx of the index finger of his right hand (Fig 1&2). It was tender on palpation. The patient was well-oriented, afebrile with normal cardiac frequency and regular blood pressure done. No bony lesions were identified by radiographic studies. FNAC was done and the diagnosis of glomus tumour was made.

Surgical excision was performed under local anesthesia after obtaining informed written consent from the patient (Fig 3&4). A midline incision was made over the dorsal aspect of the distal phalanx of his right index finger. The mass was well circumscribed and removed with blunt dissection and sent to pathology department.

Histopathological examination (Fig 5) confirmed a glomus tumor showing fibrocollagenous tissue bit revealing slit like spaces with capillary size blood vessels surrounded by plump, ovoid to rounded cells in cord like nests. These cells were showing minimal pleomorphism, bland nuclear chromatin, small distinct nucleoli and moderate amount of eosinophilic cytoplasm.

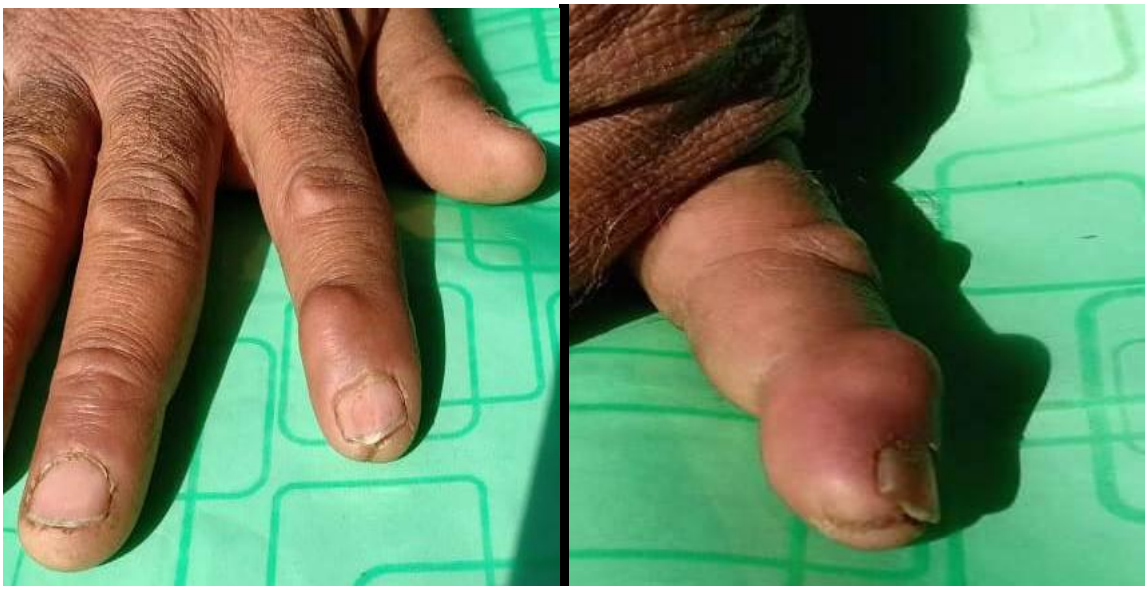

Fig. 1&2: Glomus tumor on the dorsomedial aspect of distal phalanx of right index finger.

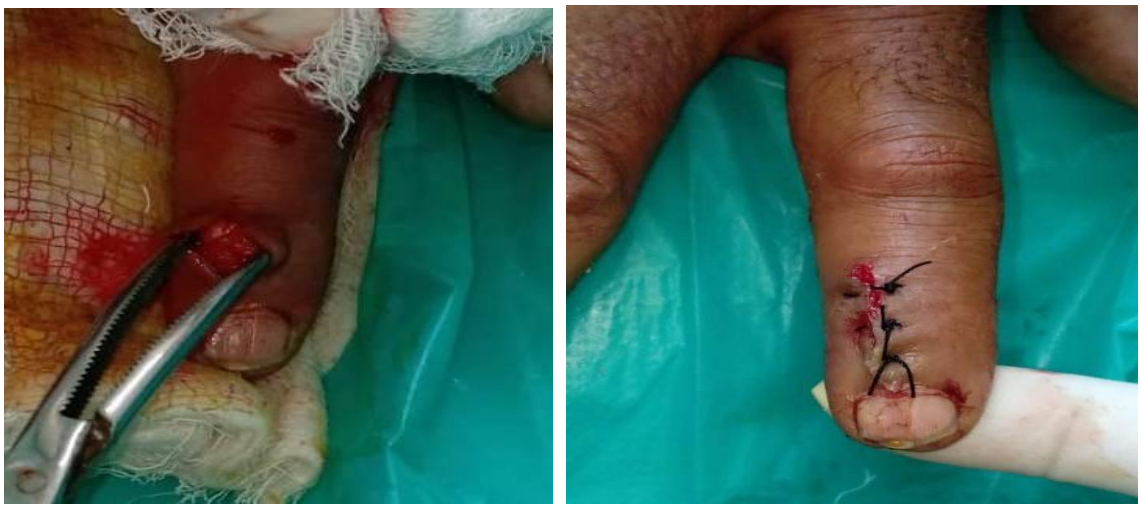

Fig. 3&4: Operative images.

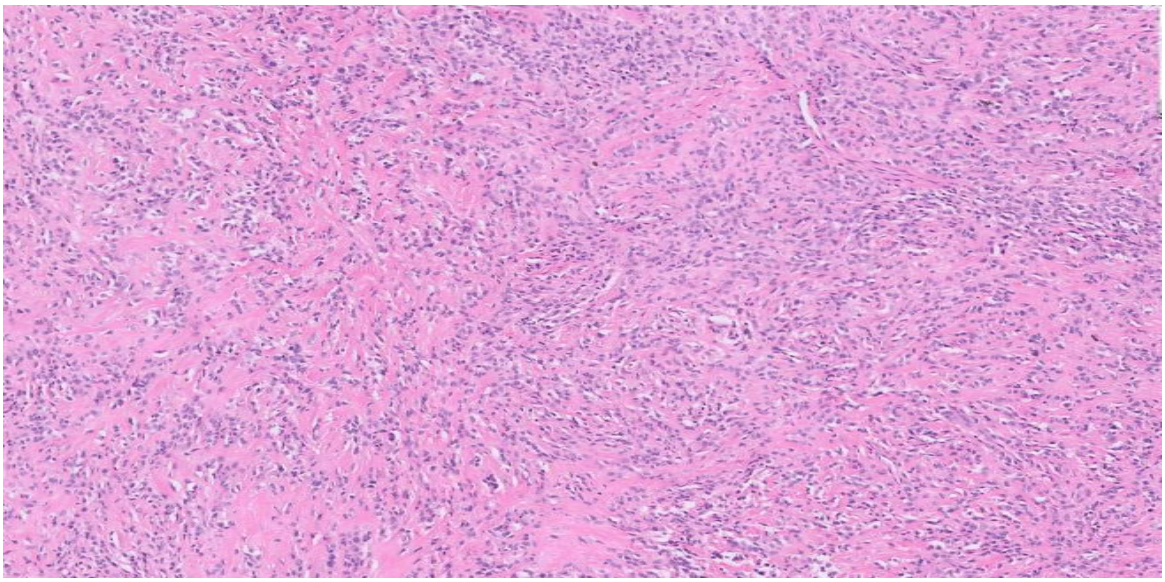

Fig. 5: Histopathology image showing glomus cells surrounding the capillary size blood vessels.

His symptoms improved on removal of tumor and the wound healed without any complication. At follow-up visits, he presented with no signs of recurrence with complete healing of the pain within 1 year.

DISCUSSION

Glomus tumors are rare, benign perivascular hamartomas of the glomus apparatus.[3] Glomus tumors develop from modified glomus cells which are specialized smooth muscle cells that function as chemoreceptors.[4] The normal function of glomus cells is to regulate blood flow in capillaries in response to changes in temperature. Glomus bodies are present throughout the body but are mainly found under the nail, on the fingertips or in the foot.[5] Glomus tumors account for less than 2% of all soft tissue tumors.[5]

The etiology of glomus tumors is unknown and it may be related to age, sex, trauma or inheritance. Glomus tumors are categorized as either solitary or multiple, according to their clinical presentation.[6] The most frequent is the solitary type, which affects more females in middle age with predominant location on the fingers, more commonly in the distal phalanges.[7] Multiple glomus tumors are more commonly seen in males usually younger than 20 years of age. Of all glomus tumors, 75% are subungual in location.[8] It appears as a small, slightly raised, bluish or pinkish red, painful nodule,[8] as seen in our patient. Although the cause of pain in glomus tumor is not clearly understood, several hypotheses have been proposed.[8] The capsules of the tumors render them sensitive to pressure. There are abundant mast cells in the glomus tumors and they release substances such as heparin, 5-hydroxytryptamin, and histamine, causing the pressure or cold receptors to be sensitive.[6] Numerous non-myelinated nerve fibers also penetrate into the glomus tumors rendering them pain sensitive.[8]

Glomus tumors are difficult to diagnose, particularly as they are often small, and situated deep in the fingertip. The common characteristic is the long duration of symptoms before correct diagnosis and treatment. During this period, the patient is in pain because of both errors in diagnosis and the fact that other medical and surgical treatments are useless.[9,10]

They classically present with a triad of symptoms, which include: pain, pinpoint tenderness and hypersensitivity to cold. This presentation is presumed to enable a clinical diagnosis in 90% of cases.[9] Other symptoms include distinctive subungual discoloration, hypoesthesia, atrophy, osteoporosis in the lesion and autonomic disturbance such as Horner syndrome.[6]

Radiologically, glomus tumors appear either as bone erosion or invasion depending on where it arises. A sclerotic border is present owing to the slowly enlarging mass. X-ray, computed tomography (CT), angiography and ultrasonography can be conducted for more accurate diagnosis.[6] Radiographs can show cortical thinning or erosive changes in the adjacent bone in some cases.[8] Our patient had no such abnormalities. MRI can also be used; it is noninvasive and it provides excellent contrast between a neoplasm and normal tissue.[6] It can also be helpful in making differential diagnoses, such as neuroma, melanoma, pigmented nevus and hemangioma, as well as foreign bodies.[8]

Histologically there is variable composition of glomus cells, blood vessels and smooth muscle cells.[8] Glomus cells are organized in nests around the blood vessels.[11]

Complete excision is essential in the prevention of recurrence,[12] and the only solution to relieve pain, given the fact that anti-inflammatory drugs have little or no effect.[13] After complete tumor removal, pain relief is rapid and the finger regains its normal appearance in 3 months.[11] If not, re-exploration of the affected area and repeat imaging should be done.[8] Meticulous care needs to be taken at the first operation to completely remove all lesions because the recurrence rate can be from 5 to 50%, mainly due to incomplete excision.[14] It is generally thought that symptoms that recur within days to weeks of surgery may suggest inadequate excision; in contrast, symptoms when they appear 2 to 3 years postoperatively may indicate multiple tumors.[15]

CONCLUSION

We report the case of a glomus tumor arising in the dorsomedial aspect of distal phalanx of a finger, with typical symptoms of long-term pain and sensitivity to touch. We aim to emphasize the importance of the inclusion of the glomus tumor among the possibilities of differential diagnosis of painful digital nodules, despite its low occurrence. Clinicians should also keep the possibility of these tumors in mind and perform careful examinations and preoperative tests. Complete surgical excision is mandatory to get complete relief from the symptoms and to avoid recurrence.

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