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Global Journal of Health Science and Research

Case Report

Glomus tumor mimicking as cervical radiculopathy

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Received: 15 January 2023
Accepted: 26 April 2023
EPub Ahead of Print: 24 July 2023
Published: 20 September 2023

DOI
10.25259/GJHSR_13_2023

Quick Response Code:

ABSTRACT

Glomus tumors are rare, painful, and usually benign neoplasms typically occurring at the subungual aspect of digits. Patients usually complain of extremely painful episodes. Symptoms occur spontaneously or elicited by local compression and cold environment, in special if the tumor has an acral location. We describe a case of cervical radiculopathy caused by glomus tumor which developed spontaneously causing pain at the right index finger. Pain was excruciating, which increased on touching and sudden striking on objects. There was no neck pain, no sensory loss, and no weakness. Pain radiates to the elbow and sometimes shoulders. The patient was given trial of neuropathic medications without much relief. Nerve conduction studies were normal. Magnetic resonance imaging spine minimal disk bulge at C5–C6 level with no neural compression. On examination, the neck movements were normal and power, tone, and reflexes were normal. Neurological examination was normal. Severe tenderness on palpating the right index finger nail. MRI of the right index finger revealed a glomus tumour. Glomus tumor was diagnosed and the patient underwent surgical excision. There can be a delay in diagnosis in glomus tumours.Cervical radiculopathy may be diagnosed erroneously in patients if careful physical examination and investigations are not done.

Keywords: Glomus tumor, Cervical radiculopathy, Nail pain, Severe upper limb pain

INTRODUCTION

Glomus tumors are painful neoplasms arising from glomus cells of glomus bodies, which are specialized arteriovenous structures within the subcutaneous connective tissue. They are involved in body temperature regulation.[1,2] These glomus cells are modified smooth muscle cells with contractile abilities and they surround the arterial end of a glomus body, which is also known as Sucquet–Hoyer canal.[3,4] Glomus tumors occur mostly as a solitary mass at the subungual area of digits because these areas are rich in glomus bodies. Extradigital glomus tumors are found in different parts of the upper and lower extremities as well as the nose, cheek, ear lobe, bone, back, stomach, lungs, trachea, and fallopian tube.[1] Glomus tumors can present with varying non-specific localizing signs that may lead to misdiagnosis. They present with a triad of symptoms – pain, focal tenderness, and cold hypersensitivity. In general, cold intolerance is often absent as a reported symptom of extradigital glomus tumors of upper or lower extremities. Complete surgical excision is curative. Physicians should have a high level of suspicion and include glomus tumor in the differential diagnosis when patients present with an isolated peripheral neuropathy or radiculopathy symptoms.[3,5,6]

DISCUSSION OF CASE

A 40-year-man complaining of severe pain for 5 years involving the right finger. Pain was excruciating, which increased on touching and sudden striking on objects. There was no neck pain, no sensory

loss, and no weakness. Pain radiates to elbow and sometimes shoulders. The patient was evaluated at multiple centers and the diagnosis of cervical radiculopathy was considered. The patient was given trial of neuropathic medications without much relief. Nerve conduction studies were normal. Magnetic resonance imaging (MRI) spine mild disk disease at C5–C6 level with no neural compression.

On examination: Neck movements were normal and power, tone, and reflexes were normal. Neurological examination was normal. Severe tenderness on palpating the right index finger nail. MRI of the Right Index finger showed the glomus tumour. No evidence of nail bed infection was seen. MRI of the right index finger showed glomus tumour [Figure 1]. Thus, the possibility of glomus tumor was considered.

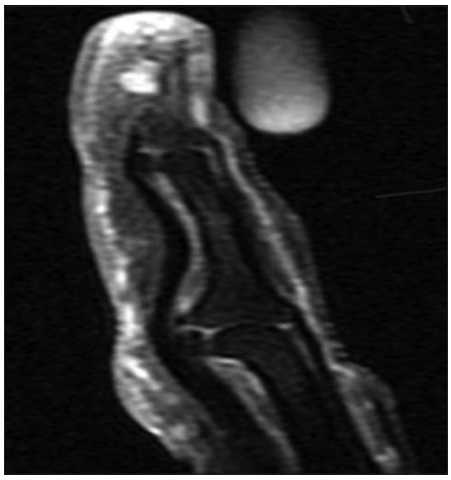

Figure 1: MRI of the right index done at our center.

DISCUSSION

Glomus tumors are rare, benign vascular tumors that occur anywhere in the body. Of these, 75% occur in the hand. Fifty percentages to 90% of glomus tumors in the hand are subungual. These tumors usually present in people between the ages of 30 and 50 years and have a male-to-female ratio of 2:1. Our patient was in this age group.

Glomus tumors may be solitary or multiple; solitary lesions are encapsulated and most commonly subungual, while multiple tumors are unencapsulated and rarely subungual. Multiple tumors present in 2–3% of cases, are usually asymptomatic, and present earlier in life.[7]

The diagnosis is primarily clinical; glomus tumors classically present with a triad of severe intermittent pain, localized tenderness, and sensitivity to cold.[8] The tumors are usually <1 cm in their greatest dimension at the time of presentation. The patient will normally not permit palpation of the tumor due to the tenderness. In addition, subungual glomus tumors may present with an area of blue discoloration under the nail with or without nail deformity. Our patient was in severe pain but had no discoloration. In other studies, too no bluish discoloration of fingertips was found.

The delay in the diagnosis of our patient presented here led to an aggravation of the symptoms and the patient being referred multiple times and treatment changes.

The diagnosis of a glomus tumor may be aided using several imaging modalities including plain radiography, Doppler ultrasonography, and MRI. Plain radiographs may detect some concavity in the bone in patients with tumors that are adjacent to bone and present for a significant duration of time. Vandenberghe and De Smet described a technique in which lateral finger radiographs of two opposing fingertips pointing toward each other are taken, allowing for a comparative view of both fingertips; thus, even subtle cortical scalloping of the affected side can be detected. This sign, however, is present in only 22% of patients.[9]

Computed tomography scan imaging is not useful. Ultrasonography especially with color Doppler may identify these lesions.

High-resolution MRI is a sensitive but not specific diagnostic tool; it can detect lesions as small as 1 mm. MRI is therefore a useful radiological adjunct to clinical examination, especially in those cases with non-specific symptoms. However, an MRI does not always show a glomus tumor, and a strong clinical suspicion should therefore lead to surgical exploration even in the face of a negative MRI.[7]

Histological examination of submitted tissue provides a definitive diagnosis. Glomus tumors are made of three primary cell/tissue types: glomus cells, vasculature, and smooth muscle cells. There are three histological subtypes, based on the predominant cellular pattern within each tumor. Solid glomus tumors have poor vasculature and a scant smooth muscle component, whereas glomangioma tumors have a prominent vascular component. Glomangiomyoma tumors have prominent vascular and smooth muscle components. Solid glomus tumor is the most common variant (75%) followed by glomangioma (20%) and glomangiomyoma (5%).[10] In our patient, biopsy could not be done.

Treatment of glomus tumors is by surgical excision. The tumor is ideally excised along with its capsule failure to remove the whole tumor which will lead to a recurrence. In our patient, surgical excision was done, but the patient was lost to follow-up.

Recurrence rates of between 1% and 8% have been reported after surgical excision. Recurrence within weeks to months of surgery is thought to be due to inadequate excision, while recurrence occurring more than 2 years after surgery is regarded as the result of new tumors.[7]

CONCLUSION

Patients with glomus tumors may spend many years in pain and distress due to misdiagnosis undergoing unnecessary and

costly investigations which add to the delay in the diagnosis and treatment. Sensitization and education of healthcare workers will help in the early diagnosis and treatment of this potentially disabling pathology, which can be cured by surgical excision. Radiculopathy should be considered in the differential diagnosis and evaluated clinically and radiologically.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Yadav PK, Deokuliar A. Glomus tumor mimicking as cervical radiculopathy. Glob J Health Sci Res 2023;1:168-70.