A rare case of Glomus Tumor of the Thenar Eminence of the Hand Misdiagnosed as Carpal Tunnel Syndrome.

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What to Learn from this Article?
Glomus tumors very rarely occur on the thenar eminence of the hand, however careful evaluation of such tumors is recommended by the authors to avoid misdiagnosis and ordeal to the patient.

Abstract

Introduction: Glomus body is an apparatus present in the skin at the arterio-venous junction whose main function is to control the body temperature. Hyperplasia of the glomus body results in a tumor called glomus tumor. Masson described this entity first in 1924, as a tumor of the neuromyoarterial body. Due to its symptoms, it is often misdiagnosed and wrongly treated which adds burden to the patient.

Case Report: We report a rare case of glomus tumor presenting at an unusual site that is the thenar eminence of the palm. He had been misdiagnosed and wrongly treated for carpal tunnel syndrome. The tumor was surgically excised and diagnosis was confirmed by histopathological studies. We present this case for its rarity, unusual presentation and it being a cause for misdiagnosis.

Conclusion: Common sites of glomus tumors are the finger tips or under the nail. Many such cases have been reported in the literature. We present this case because of its unusual site of presentation and it being a cause of misdiagnosis. The authors feel that this report could offer a learning experience to orthopaedic surgeons when similar patients present to them to avoid adding burden to the already anxious patient.

Keywords: glomus tumor; thenar eminence; misdiagnosis; carpal tunnel syndrome.

Introduction

Glomus body is an apparatus present in the skin at the arterio-venous junction whose main function is to control the body temperature. Hyperplasia of the glomus body results in glomus tumor. Masson described this entity first in 1924, as a tumor of the neuromyoarterial body [1]. Clinical diagnosis is sufficient to diagnose this tumor if the clinician has a high index of suspicion. Stabbing pain, paroxysmal pain and cold hypersensitivity have been described as the classic triad of glomus tumor by Carroll in 1972 [2, 3, 4]. If this condition is not diagnosed early, it leads to unsuccessful treatment and anxiety to the patient. We report a similar case of glomus tumor of the thenar eminence of the hand which was misdiagnosed as carpal tunnel syndrome and treated for the same.

Case Report

A 55 year old male presented to us with complaints of a stabbing pain of his right palm. He complained of sharp shooting pain while working or handling objects. He had consulted a neurologist and was diagnosed with carpal tunnel syndrome and started on medication and physiotherapy. Nerve conduction studies done for median nerve were normal. His symptoms failed to subside following which he presented to us.

On inspection, the right hand was apparently normal. There was no discoloration or presence of any abnormal swelling.

On palpation, there was a focal point of tenderness of his right thenar eminence. A small tender nodule was felt on deep palpation of his right thenar eminence. Carroll’s triad was clinically positive in this patient. There was no distal neurovascular deficit.

After palpation of a tender nodule, he was advised an ultrasonography scan. The scan revealed a highly vascularized solitary nodule of around 1x1 cm. A provisional diagnosis of hemangioma was offered.

The focal area of tenderness was demarcated. A 2 cm incision was made over the demarcated area. Blunt dissection revealed a solitary reddish blue nodule of around 1x1x1 cm in size (Fig.1). The dissection was carried out around the mass...
and was excised in toto (Fig.2). A thorough wound wash was given and wound was closed in layers.

Post operative period was uneventful.

Histopathology studies showed multiple blood vessels. The blood vessels were surrounded by tumor cells with dense abundant cytoplasm and multiple nucleoli. Features were suggestive of Glomangioma. (Fig.2).

**Discussion**

In our literature review, glomus tumor (GT) accounts for 2% of all soft tissue tumors [5]. A meager 1-5% of all neoplasms in the hand are reported to be glomus tumors [6]. More than 90% of glomus tumors occur in the finger tips. Extra-digital GT have been reported sporadically in sites like elbow, thigh, forearm and even the gastrointestinal tract [7,8,9,10,11].

We found only two previously reported articles by Gabriele Scaravilli et al who reported a case of glomus tumor in the thenar eminence in a patient with neurofibromatosis type 1 in 2015 [12]. Brems et al hypothesized that the GT might arise from myofibroblasts derived from the neural crest stem cell in neurofibromatosis due to similar pathogenic mechanisms [13]. However, our patient had no co-morbidities to possibly explain the unusual site which has been described only in one other case which was reported in 1956, by Rieunau et al. [10].

GT has a predilection for women in the age group of 20-40 years [14]. In our case, the patient was a male aged 55 years which is unusual.

Clinical diagnosis of GT is based on Carroll’s triad. It consists of Love’s test, Hildreth’s test and cold hypersensitivity. Love’s test is performed by eliciting excruciating pain on blunt probing of the affected area using a pin head. This test can usually be demonstrated by a focal point of tenderness due to the fact that glomus tumors are usually not more than 15mm x 10mm in size. It has a sensitivity of 78% and specificity of 100% [15].

Hildreth’s test is done by eliciting attenuation in pain after applying a tourniquet and inflating it. Pain returns on deflation. It has been described to be analogous to that of a “hammer blow”. Clinical diagnosis can be done in 90% of the cases if there is a high index of suspicion. There is usually no requirement of further investigations if a thorough clinical evaluation is done. In our patient, all the tests were positive and hence, glomustumor was considered as the potential diagnosis.

We advised the patient an ultrasound scan of the palm to know the extent of the tumor. Ultrasonography revealed a solid, homogenous, hypo echoic, hyper vascular well demarcated nodule of around 1 cm in size. This is consistent with the findings in literature.

The only treatment that has been advocated by most surgeons is complete surgical excision. We surgically excised the tumor and sent it for histopathological confirmation. Histopathology confirmed our suspicion. The recurrence rate following surgery ranged from 0% to 33.3%. [16]. The patient had complete pain relief with no recurrence reported up to 18 months of follow-up.

**Conclusion**

Glomus tumors are rare tumors. They predominantly occur in the finger tips of the hand. Extra-digital glomus tumors are uncommon and difficult to diagnose. A high index of suspicion is required to make such rare diagnosis. These are often missed and misdiagnosed as in our case. Clinical evaluation is enough to make a diagnosis in 90% of the cases. If the tumor is not easily palpable as in our patient, then diagnostic tools such as ultrasonography and MRI can be used to confirm the diagnosis.

**Clinical Message**

Glomus tumors of the hand cause discomfort to the patient and lead to anxiety and depression due to the fact that the patient is often unable to handle objects or perform any fine skilled activity using his hands. After surgical excision, the dramatic relief of symptoms is encouraging to the surgeon and the patient as well. Hence, careful evaluation of such tumors is recommended by the authors to avoid misdiagnosis and ordeal to the patient.

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