

## Case Report

## A Case of Long Standing Unusual Elbow Pain, Diagnosed as Glomus Tumor on Biopsy: A Case Report and Review of Literature

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**Abstract:** Extradigital presentation of glomus tumors is not common. We are presenting the case report of glomus tumor around elbow and review of literature with regard to its clinical presentation, work-up and management. We also want to highlight glomus tumor as the essential part of differential diagnosis into patients having atypical pain around elbow joint.

**Keywords:** Glomus, tumour, extradigital, elbow, Pain, MRI, Contrast.

### INTRODUCTION

Glomus tumour is very rare soft tissue tumour of perivascular, temperature-regulating glomus body [1]. Though it is thought to be mostly benign tumour but very rare cases are being reported as malignant tumours [2, 3]. Glomus tumours are commonly found into hands specially fingers. A study conducted by Takei and Nalebuff, in which they collected the case reports about extradigital glomus tumours from 1934 till 1992, 19 of 434 (4.4%) extradigital glomus tumours were found at elbow, and made this a rare site of this uncommon tumour [4].

Despite the classic triad of the signs and symptoms like pain, point tenderness and the cold sensitivity, it can take lot of years and visits of a patient to the doctor before a diagnosis is made [4-8].

We are presenting this case report of the glomus tumour around elbow and its review of literature just to highlight its clinical presentation, work-up and management.

### CASE REPORT

38-years old right handed male patient presented in our OPD with a painful swelling on the tip of his left olecranon process for past 2 years. Although pain was not affecting his daily activities of living but it was very extremely tender to the touch. He denied any history of cold intolerance and trauma.

On physical examination, he had a tender swelling over the tip of olecranon. This was very sensitive and tender to touch. He had full range of motion of the neck, shoulder, elbow and wrist without pain. Distal neurovascular status was intact. Tinel sign was positive.

He consulted with many Orthopaedic consultants during last 2 years and was investigated extensively but no cause was

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found. Plain radiographs and magnetic resonance imaging (MRI) were performed in another hospital where it was reported normal (Fig. 1 and 2).

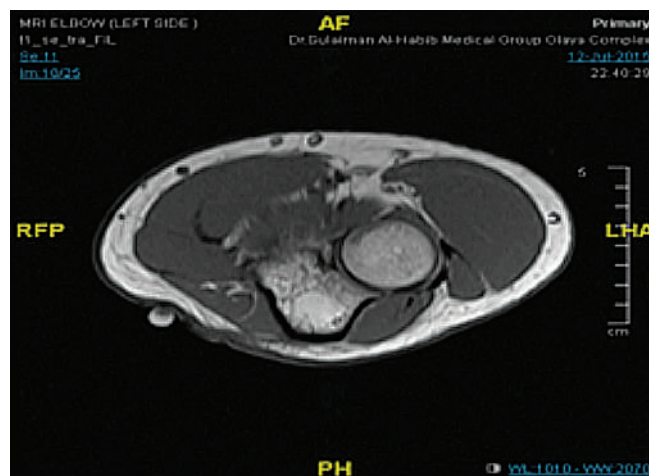


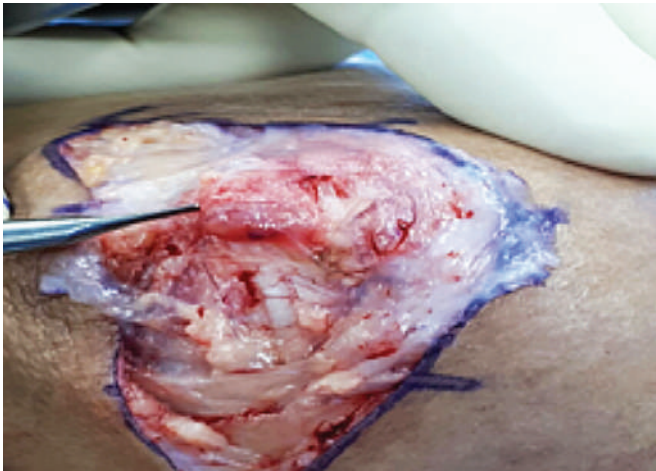
Fig. (1). Axial View of MRI Elbow Joint.



Fig. (2). Sagittal View of MRI Elbow Joint.

Our initial diagnosis was of a Neuroma with such

extreme point tenderness over swelling with positive Tinel sign. Surgery was performed and a well circumscribed nodule was identified arising from the triceps tendon (Fig. 3).



**Fig. (3).** Intraoperative Demonstration of Glomus Tumor.

Excision of the nodule was performed and sent for histopathology and the histopathology report suggested a glomus tumour comprising of homogenous cells with scanty eosinophilic cytoplasm. The cells had a vague nested growth pattern. A diagnosis of glomus tumour was confirmed.

The patient had an uneventful recovery after surgery and, at 1 week follow-up his symptoms completely resolved.

## DISCUSSION

The description and management of eight painful subcutaneous tubercles were first recorded by Wood in 1812 [4, 8, 9]. Masson used for the first time the term, glomus tumour which describes tumour originating from the contractile neuro myoarterial body which is also known as glomus body and he published it in his article in 1924 [1]. Glomus body controls temperature and blood pressure through regulation of peripheral blood flow by acting as specialized arteriovenous anastomosis. Glomus bodies are found in stratum reticularis layer of dermis [10] and subcutaneous tissue of limbs. Incidence of glomus tumours is 1.5% to 4.5% involving upper limbs therefore they are uncommon benign soft tissue tumours of upper limbs [6]. Mostly they are benign tumours, but rarely malignant tumours have also been reported [2, 3]. Characteristic features that suggest the malignant nature are those tumours which are present in deep locations, size more than 2 cm, have malignant features on biopsy like nuclear atypia, mitotic activity or necrosis [2].

Common presentation of glomus tumours is in hands, especially fingers where occurrence rate is up to 75% [3-6]. Although classic presentation of glomus tumours is in fingers but many cases are also reported in extradigital

sites [6, 11]. In a review of literature about extra digital presentation of glomus tumors by Takei and Nalebuff, mainly for upper limbs, they noticed 11% to 65% occurrence rate [4]. They found 19 (4.4%) glomus tumors out of 434 over elbow. Additionally, in Mayo clinic where they reviewed the treatment of glomus tumors for 20 years and they found only four cases over elbow [6], therefore making elbow very uncommon site of extra digital glomus tumors.

63% to 100% of patients with digital tumors have pain, cold intolerance or hypersensitivity and extreme tenderness with touch [7, 10]. Pain with point tenderness has been described as most specific sign and symptom for extradigital tumors [6] and Van Geertruyden diagnosed these tumors in 90% of patients in their study while having that presentation in mind [7]. But, however, this can mislead, as lot of studies and case reports including our case report shows that diagnosis can be delayed commonly specifically in extra digital sites. Average time for diagnosis is from 7 to 11 years [4-7], ranging from 4 months to 40 years [11]. It takes many patients two or three consultations before diagnosis [6, 7, 12] that is why it emphasizes significance of knowledge of all signs and symptoms of glomus tumors. Love's pin test, Hildreth's test and the cold sensitivity test are best described for the diagnosis of these tumors. In a review study by Bhaskaran and Navadgi they found cold sensitivity test more sensitive, specific and authentic [13], although it is uncommon in extra digital tumors.

Radiographs, ultrasound, computed tomography, single-photon emission computed tomography and MRI scan are commonly used for the diagnosis [3] but MRI is considered more authentic [3, 6], which is 90% sensitive, 50% specific and have 97% positive predictive value [14]. It has been suggested in lot of studies that these lesions can be surgically explored having classical signs and symptom even with negative MRI, because small lesions can be missed on MRI [6, 14], as in our case where it was reported normal. The reason of this negative MRI could be either lesion was in periphery or it was performed on 0.2-T scanner so, it can be false negative because of small size and poor quality of scan.

Diagnosis should be confirmed on the basis of classical signs, symptoms and findings of MRI, but always differential diagnosis must be kept in mind. Many benign and malignant soft tissue masses have same presentations and they have excessive differential diagnosis such as benign tumors, nerve sheath tumors, vascular tumors and malformations, hemangiomas, arteriovenous malformations, leiomyoma and dermatofibroma. Malignant soft tissue sarcomas, like synovial sarcoma, leiomyosarcoma, malignant fibrous histiocytoma (for deep lesions specifically), dermatofibrosarcoma protuberans and metastases is most significant and somehow most difficult differential diagnosis [3].

Surgical exploration and excision is the main stay of treatment of glomus tumours. Lesion should be carefully excised in order to avoid recurrence. In the literature it has been reported that they have 12% to 33% recurrence rate [6, 12]. Recurrence that occurs within weeks after surgery is usually due to insufficient removal of lesion and that occurs years after surgery is most probably due to new process or multiple tumours [6, 12]. So we suggest to send every sample after surgical excision for histopathology in order to make sure of such diagnosis especially over unusual sites. Surgery is normally very successful and, as with our case, complete surgical excision results in immediate relief of the symptoms [3, 10, 11].

## CONCLUSION

We present a case of rare tumour presenting in an uncommon site to highlight the importance of considering a glomus tumour as part of the differential diagnosis in a patient with atypical pain around the elbow. Knowledge of the relatively typical history and MRI findings will hopefully decrease the time to diagnosis and allow for early curative surgical treatment. When suspecting a glomus tumour as a cause of pain around the elbow, a modern high resolution (1.5- or 3-T) scanner with contrast should be used and every sample should be sent for histopathology in order to avoid missing the important diagnosis of glomus tumors especially over unusual sites. A thorough history and examination and discussion with the radiologist and pathologist remains essential. It is important to pay attention to detail to ensure a complete excision of the lesion and thus decrease the recurrence rate.

## CONFLICT OF INTEREST

Declared None.

## ACKNOWLEDGEMENTS

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