**Glomus tumor of the wrist : a case report**

**ABSTRACT**

Introduction

Glomus tumors are rare benign lesions that arise from a neuro-myo-arterial structure. While they are typically located in the fingers, they can also occur in other regions of the body which can delay accurate diagnosis.

Case presentation

In this article, we report a rare localization of a glomus tumor in the dorsal wrist, discovered by a painful mass. The aim of this article is to raise awareness in the scientific community and elaborate a review of the literature.

Conclusion

Extradigital glomus tumors of the extremities are exceendingly rare lesions. Their diagnosis is often overlooked due to their incomplete clinical presentation. This case highlights the diagnostic challenges and treatment options associated with extradigital glomus tumors.

**INTRODUCTION**

Glomus tumors are infrequent benign neoplasms originating from neuromyoarterial glomus bodies, representing less than 2% of soft tissue tumors [1]. Malignant glomus tumors are exceedingly rare, comprising as high as 2.9% of all glomus tumors [2]. Typically, glomus tumors manifest in the hand and can be diagnosed relatively easily based on the classic triad of pain, tenderness, and cold hypersensitivity. However, they may also arise in other locations, such as the thigh [3], the leg [4] and the wrist, where they’re more challenging to diagnose.

**CASE REPORT**

A 58-year-old, right-handed housewife, with a history of hypertension, presents to our hand surgery consultation with a painful soft tissue mass on the dorsal side of her right wrist. Pain was magnified on palpation or wrist mobilisation causing electrical-shock-like sensation. There was no hypersensitivity to cold.

Furthermore, there is no history of trauma.

Inspection revealed no signs of local inflammation or changes in skin color. Palpation identified a soft, mobile, painful mass on the postero-medial aspect of wrist, measuring less than one centimeter. Range of motion of the right wrist was within normal limits. No additional explorations were performed.



FIG 1. Soft tissue mass on the dorsal side of the right wrist

Surgical resection of the mass was performed under local anesthesia. A dorsal approach was used. The perioperative appearance showed a 5mm mass, slightly reddish, rounded, and firm.

Histological analysis concluded to a glomus tumor.

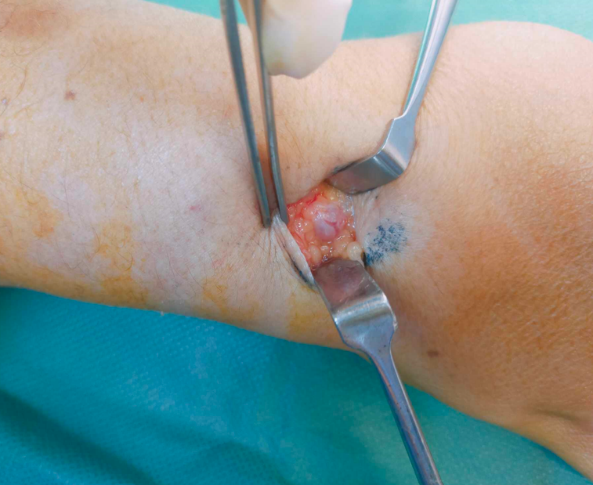


FIG 2. Surgical resection of the mass

In the post operative course, pain has completely disappeared and the patient demonstrated full-range mobility of the wrist joint. There were no evidence of recurrence at the 4 month check-up.



FIG 3. Post-operative condition

**DISCUSSION**

Glomus tumors represent 2% of all soft tissue tumors. The World Health Organization recently classified glomus tumors into three types : benign, intermediate glomangiomatosis, and malignant [1].

The glomus body, situated in the reticular dermis, is a contractile structure composed of neuromyoarterial components. It is predominantly located in the distal regions of the fingers. Reports of extradigital glomus tumors are relatively uncommon [3]. Literature is mainly in the form of case report of lesions located at the shoulder [7], buttock [8], para-achillean region [9], thigh [8], the leg [4] and foot [11]. Deeper infiltrations have been documented in visceral organs, bones [14], radial nerve [16] and rotator cuff [17].

Glomus tumor typically presents as a painful, reddish-blue, firm lesion in a 30- to 40-year-old woman. It is often subungual.

Patients presenting with extradigital glomus tumors are generally within the age range of 20 to 40 years, with no significant gender predilection. However, some series have reported a male predominance in extradigital forms [19].

A notable characteristic of these tumors is the long delay between symptom onset and definitive diagnosis. For patients with digital lesions, this period ranges from 1 to 22 years while for those with extradigital tumors, it was more prolonged ranged from (five to 25 years) [18]. Correct diagnosis was missed in 31% of cases [20].

A history of local trauma is a common finding in these patients [20]. Researchers reviewed the characteristics of eight patients who had an extradigital glomus tumor all of whom had experienced local trauma with an interval of 2 weeks to 21 years before the tumor was diagnosed. Types of injuries included previous surgeries, ruptured tendon repairs, puncture wounds, glass injuries and low-level trauma. A history of trauma or injury was not identified in our patient.

The classical clinical triad comprising pain and hypersensitivity to cold is classical, although hypersensitivity to cold is less commonly reported [22]. Superficial lesions typically exhibit a faintly violaceous coloration.

The wrist is an uncommon site for extradigital glomus tumor.

In this case, there have been at least 22 documented patients [20,24]. Like other extradigital glomus tumors, those found on the wrist were more frequently observed in older men. While all tumors were tender, four patients did not experience increased pain in response to cold.

A retrospective analysis of 56 extradigital glomus tumors revealed that the most frequently differentiel diagnosis were hemangioma, neuroma, and neurofibroma [6].

Imaging studies, while not providing unequivocal confirmation, can raise suspicion for glomus tumors. Radiographs are usually unremarkable except in rare instances involving osseous or subungual formations [14,27]. Ultrasound examinations generally reveal a well-circumscribed, encapsulated hypoechoic lesion [16]; however, some studies have reported hyper-echoic lesions [7]. MRI findings typically demonstrate an intermediate signal intensity on T1-weighted images that enhances following gadolinium administration and appears hyperintense on T2-weighted images [5,13]. Ultrasound may be the preferred method for evaluation, as MRI has a specificity around 50%, is more time-consuming, and incurs higher costs. Furthermore, a glomus tumor can still exist even if the MRI results are negative.

In all cases reviewed, surgical intervention remains the primary treatment modality and involves complete excision including the joint capsule in articular locations to avoid recurrence followed by histological examination which can lead to total relief of pain as demonstrated in our case. Three histologic types of glomus tumors have been observed: solid, glomangioma, and glomangiomyoma.

While recurrences have been documented for digital glomus tumors, the limited number of cases involving extradigital forms precludes a reliable risk assessment for recurrence in this context [27].

Although multiple [33] or malignant [2] variants have been described, they are exceedingly rare; such possibilities should be particularly considered when evaluating large deep-seated tumors.

**CONCLUSION**

Glomus tumors located in the wrist are an unusual manifestation of extradigital glomus tumors, which are already quite rare. Symptoms such as pain and cold hypersensitivity, should prompt consideration of glomus tumors. This case highlights the diagnostic challenges and treatment options associated with extradigital glomus tumors.

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