Intravascular Glomus Tumor of the Wrist Causing Chronic Wrist Pain

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Abstract

Glomus tumors are glomus body neoplasms that most commonly occur in the sub-ungual areas of the hand, typically characterized by small nodules associated with localized tenderness, cold sensitivity, and excruciating paroxysmal pain. Extradigital glomus tumors can present a diagnostic challenge because they are rare and usually accompanied by nonspecific symptoms. Intravenous origin of the glomus tumor, especially in the wrist, is much rarer. The authors here report an intravenous glomus tumor of the wrist presented with atypical features such as insensitivity to cold and a history of long-term pain, which led to the misdiagnosis of the lesion as extensor tendonitis. Following the excision of the tumor mass, the patient's pain completely disappeared and no further pain was reported afterward. As a result, the authors suggest a more careful workup for the correct diagnosis of glomus tumors with such atypical manifestations. They also suggest considering intravenous glomus tumor in the differential diagnosis of a chronic wrist pain.

Keywords

- ▶ extradigital
- ▶ intravenous
- ▶ glomus tumor
- ▶ wrist
- ▶ chronic pain

Introduction

Glomus bodies are components of the dermis layer of the skin involved in the regulation of blood flow and temperature of the skin. They are found in their largest concentration in the fingertips, palms of the hands, and soles of the feet. Glomus tumors are benign type of vascular neoplasm that originates from normal glomus bodies in the skin and are most commonly observed in the subungual areas of the digits.¹ These tumors represent 1 to 4.5% of upper extremity neoplasms and comprise less than 2% of soft tissue tumors.² Tumors typically present as painful solitary soft tissue lesions exquisitely tender to palpation and hypersensitive to cold.³ Clinical diagnosis of glomus tumor can be difficult in 10% of cases resulting in persistent pain and symptoms.¹ This difficulty is usually caused by the lack of typical characteristics of the lesion or the incidence of the tumor in uncommon locations. Extradigital presentation of glomus tumor is rare and also associated with atypical characteristics of lesion. Intravenous origination of glomus tumor, especially in the wrist, is much rarer and its diagnosis could be more confusing.⁴ Here the authors present a case of a large atypical intravenous glomus

tumor of the wrist causing 4 years of chronic pain, primarily misdiagnosed as extensor tendonitis.

Case Presentation

A 48-year-old right-handed woman, who was working as a secretary, was referred to the center with a long-term pain of the left wrist. At the beginning, a vague pain was noticed at the dorsal aspect of the wrist. Clinical and radiographic evaluation did not result in a definite diagnosis at that time. In the following, the chronic pain of the patient was considered to be caused by extensor tendonitis. Subsequently, a splint was used for the immobilization of the wrist, along with anti-inflammatory medication to reduce the patient's inflammation and pain. However, not only the clinical symptoms were not recovered, but also the pain was exacerbated. The pain was more severe at the palpation on the back of the hand.

From 1 year ago, the patient noticed a painful small mass at the posterior aspect of the wrist, with its pain extending to the proximal side of the hand. Physical examination revealed a 5- × 10-mm superficial, palpable, hard, mobile, and well-circumscribed soft tissue mass on the posterior aspect of

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the left wrist, which was extremely painful. The mass was not sensitive to cold. No traumatic or inciting event was recalled by the patient. In addition, no past medical history such as rheumatologic or neoplastic disorders was reported by the patient. Laboratory tests including white blood cell (WBC) count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and alkaline phosphatase (ALP) were at normal range. Rheumatologic tests were at normal range as well. Plain X-rays of the wrist were reported normal.

Based on the clinical findings, the diagnosis of a neuroma or glomus tumor was indicated and excisional biopsy was recommended. Using a tourniquet and limb elevation for 5 minutes, the mass was approached through a longitudinal 3-cm incision at the dorsal side of the wrist under the general anesthesia. A 4- × 9-mm intravenous mass with a firm consistency was removed after ligation of the distal and proximal ends of the dorsal wrist vein and the specimen was sent to the histologic examination (►Fig. 1A, B). Histologically, the tumor originated in the wall of a vein and bulged into the lumen. It was composed of nests of glomus cells wrapped around capillary-sized vessels, embedded in a hyalinized

background. The cells had rounded nuclei and amphophilic cytoplasm (►Fig. 2A, B).

The patient's pain was completely disappeared, and 1-year follow-up of the patient showed no pain, symptoms, or tumor recurrence. Informed consent has been obtained from the patient for publication, including any necessary photographs.

Discussion

Less common types of glomus tumors such as extradigital and intravascular lesions can present a diagnostic challenge.⁴ Intravascular glomus tumor was first described in 1991 in the forearm of a 40-year-old man, and only a few cases have been reported.⁵⁻⁷ Glomus tumors of the wrist are also rare, and to the best of the authors' knowledge, only a few cases have been earlier reported.^{1,8,9}

Here the authors reported an intravascular glomus tumor of the wrist with atypical features including a 4-year history of chronic pain of the wrist, which distracted the correct diagnosis of the disorder. Although the history of chronic pain has been rarely noticed in earlier reports of glomus

Fig. 1 (A) Intraoperative photograph of the intravascular glomus tumor of the left wrist. (B) Photograph showing the excised intravenous glomus tumor.

Fig. 2 (A) Capillary-sized vessels surrounded by glomus cells originating in the vessel wall indicated by arrow (× 20). (B) Proliferation of monotonous cells with round nuclei in a hyalinized stroma (× 20).

tumor, presentation of the glomus tumor of the wrist with chronic pain has not been previously reported.⁷ Insensitivity of the mass to the cold, which has also been rarely reported, further complicated the diagnosis.⁷

This case shows that atypical presentation of glomus tumor such as intravenous orientation, rare anatomic locations, insensitivity to the cold, and the history of chronic pain, might lead to the misdiagnosis or late diagnosis of the lesion. Therefore, a more careful workup is needed for the correct diagnosis of glomus tumors with such atypical locations and manifestations. Moreover, intravenous glomus tumor should be considered in the differential diagnosis of the chronic wrist pain.

Although the imaging findings are usually nonspecific, making prospective diagnosis difficult, magnetic resonance imaging (MRI) characteristics remain fairly consistent, showing a relatively homogenous T1 iso-to hypointensity, relatively homogenous T2 hyperintensity, and strong postcontrast enhancement. Thus, a combination of MRI findings and clinical history may help the correct diagnosis of the same presentations.⁴

Conflict of Interest

None.

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