Intravenous Glomus Tumor Masquerading as Lateral Antebrachial Cutaneous Neuroma

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Abstract

Background: Intravenous glomus tumors are extremely rare. **Methods:** We report a patient with an intravenous glomus tumor within a venous aneurysm misdiagnosed as a neuroma of the lateral antebrachial cutaneous nerve, based on clinical exam, electrodiagnostic studies, and findings on a magnetic resonance imaging neurogram. **Results:** After surgical resection, the patient's symptoms, including pain and localized hypersensitivity, totally resolved. **Conclusions:** This case illustrates 2 important points. First, unlike extradigital glomus tumors, magnetic resonance imaging is not reliable in diagnosing intravenous glomus tumors. Second, in the presence of chronic localized neuroma type pain and sensitivity in the upper limb without a clear cause, an extradigital cutaneous or intravenous glomus tumor must be considered in the differential diagnosis.

Keywords: glomus tumor, neuroma

Introduction

Glomus tumors are most commonly encountered in the fingers and at the tip of the coccyx. Less commonly they have been reported in other cutaneous locations, viscera, bone, and rarely in an intravascular location.^{1–3} When encountered near the skin, pain and localized tenderness are a hallmark of this lesion.³ Misdiagnosis is common, with magnetic resonance imaging being the most reliable modality for eventual diagnosis and localization of extradigital glomus tumors.⁵ Here we report an intravenous glomus tumor misdiagnosed clinically as a neuroma of the lateral antebrachial cutaneous nerve based on clinical examination as well as findings on electrodiagnostic studies and a magnetic resonance imaging (MRI) neurogram.

Case Report

A 47-year-old man presented with persistent and debilitating pain and hypersensitivity in the right antecubital fossa. Flexing the elbow exacerbated the pain. The pain predated a repair of a distal biceps tendon rupture and a neurolysis of the lateral antebrachial cutaneous nerve on separate occasions. He was unable to use a telephone because elbow flexion worsened the pain. In addition, the area was hypersensitive to touch.

A trial injection of the area of maximal tenderness with local anesthetic completely relieved his symptoms. Electrodiagnostic studies suggested a lesion of the right lateral antebrachial cutaneous nerve with no evidence of radial nerve involvement. Sensation in the distribution of the right lateral antebrachial

Figure 1. Magnetic resonance neurogram showed a hyperintense enhancing tubular structure (arrow) suggesting a neuroma of the superficial radial or lateral antebrachial cutaneous nerve.

cutaneous nerve was intact. Magnetic resonance imaging neurogram (Figure 1) revealed a slightly hyperintense enhancing

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Figure 2. a, Intraoperative image showing a subcutaneous bulbous mass (arrow) resembling a venous aneurysm. b, The mass was separate from the lateral antebrachial cutaneous nerve (arrow), which was in continuity.

tubular structure measuring approximately 2 mm in diameter between the brachioradialis muscle and supinator muscle, approximately 2 cm deep to the volar skin and overlying the biceps tendon near the exit of the lateral antebrachial cutaneous nerve in the forearm. A presumptive diagnosis of neuroma of the lateral antebrachial cutaneous nerve or perhaps superficial radial nerve was made.

On surgical exploration, a bulbous mass in the subcutaneous tissue was encountered, grossly resembling a venous aneurysm (Figure 2). The lateral antebrachial cutaneous nerve was adherent to the structure, but in continuity. The mass was resected and histology revealed an intravascular glomus tumor within an aneurysm of a large volar forearm vein (Figure 3). Postoperatively, the patient remains pain free.

Discussion

Intravascular glomus tumors are extremely rare, with only a few case reports. Like other reported cases, pain was a common presenting symptom. When imaging studies were performed, these suggested a glomus tumor. Two different etiologies have been suggested. These include origin of the tumor from “intramural epithelioid cells” inherent to a vein and intravascular extension of a cutaneous glomus tumor.¹ Given the location of the glomus tumor in this patient, within a venous aneurysm, it is likely that an intravascular origin is more likely.

Unlike in another case report,⁴ in which the MRI was diagnostic of an intravenous glomus tumor arising from a branch of the cephalic vein, the MRI for this patient in fact led to a misdiagnosis of a neuroma of the lateral antebrachial cutaneous nerve. Until higher resolution MRI scans are available, the diagnosis of an intravenous glomus tumor would have to rely on clinical symptoms. Nevertheless, MRI did lead to a diagnosis through surgical exploration.

This case illustrates 2 important points. First, unlike extradigital glomus tumors, magnetic resonance imaging is not reliable in diagnosing intravenous glomus tumors.

Figure 3. Histology revealed an intravascular glomus tumor within a venous aneurysm (H&E, 10X).

Second, in the presence of chronic localized neuroma type pain and sensitivity in the upper limb without a clear cause, an extradigital cutaneous or intravenous glomus tumor must be considered in the differential diagnosis.

Ethical Approval

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Statement of Human and Animal Rights

This article does not contain any studies with human or animal subjects.

Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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