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Case Report

Upper arm glomus tumor ☆

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ABSTRACT

Upper arm glomus tumors are uncommon, benign vascular growths originating from skin glomus bodies. They typically cause severe, paroxysmal pain triggered by cold, pressure, or touch. Diagnosis can be complex due to mimicry of other conditions, but histopathological examination confirms the presence of glomus cells. In a case study, a 46-year-old woman with an **Upper arm** glomus tumor experienced pain and a lump in her left arm. Ultrasound identified a well-circumscribed, heterogeneous, hypoechoic, pedunculated mass with internal vascularity and MRI showed a lobulated soft-tissue mass with skin involvement and polypoid projection, alongside axillary lymphadenopathy and skin thickening. Following an open biopsy that confirmed the diagnosis of a glomus tumor, the patient experienced complete resolution of symptoms after surgical excision, with no recurrence during the 24-month follow-up period.

Introduction

Upper arm glomus tumor is a rare type of benign vascular tumor that originates from the glomus bodies, which are thermoregulatory structures located in the skin and subcutaneous tissues [1]. Glomus tumors were first described by Wood in 1812, and later named by Masson in 1924 [2]. They usually occur in the subungual regions of the fingers and toes, where the glomus bodies are most abundant [3]. However, they can also arise in other parts of the body, such as the head and neck, trunk, extremities, and internal organs [4]. Upper Arm glomus tumor is one of the most uncommon sites of this tumor, with only a few cases reported in the literature [1].

The etiology of glomus tumor is unknown, but some possible factors include trauma, infection, hormonal changes, and genetic mutations [2].

The clinical presentation of glomus tumor is variable, depending on the size, location, and depth of the tumor. The most common symptom is severe paroxysmal pain, which is triggered by cold, pressure, or touch [5]. The diagnosis of glomus tumor is challenging, as it can mimic other conditions, such as infection, inflammation, or malignancy. The diagnostic methods for glomus tumor include plain radiography, ultrasound, and magnetic resonance imaging (MRI) [6].

The definitive diagnosis is based on histopathological examination, which shows the characteristic features of glomus cells [7].

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Here, we present a rare case of an Upper arm glomus tumor and discuss about our different radiographic and pathologic findings. An informed consent has been achieved to publish this case report.

Case presentation

A 46-year-old woman, presented to our hospital with a painful lump in her left arm that has been growing over the past 5 years. She reported that the pain was sharp and intermittent and was exacerbated by physical activity. there was no relationship between cold temperature exposure and her pain. due to the exacerbation of the pain she had admitted to our hospital. She had no history of trauma or injury to the area. On physical examination, there was a firm, tender mass in the left Upper arm that is approximately 3 cm in diameter. The overlying skin was erythematous and there was adjacent axillary lymphadenopathy.

Based on the patient's symptoms and physical examination findings, the physician suspected a mass. So, the patient undergone an ultrasound of the area, which revealed a well-circumscribed, heterogenous, hypoechoic, pedunculated soft tissue mass with internal vascularity in size of 4 × 3 cm in the left upper arm.

For more evaluation, shoulder magnetic resonance imaging (MRI) was performed that revealed a loblulated margin soft-tissue mass lesion within posterior mid-arm subcutaneous soft-tissue with involvement of skin and polypoid exophytic projection. Also conglomerated axillary lymphadenopathy and diffuse skin thickening over dorsal aspect of mid-arm and axillary region were noted (Fig. 1).

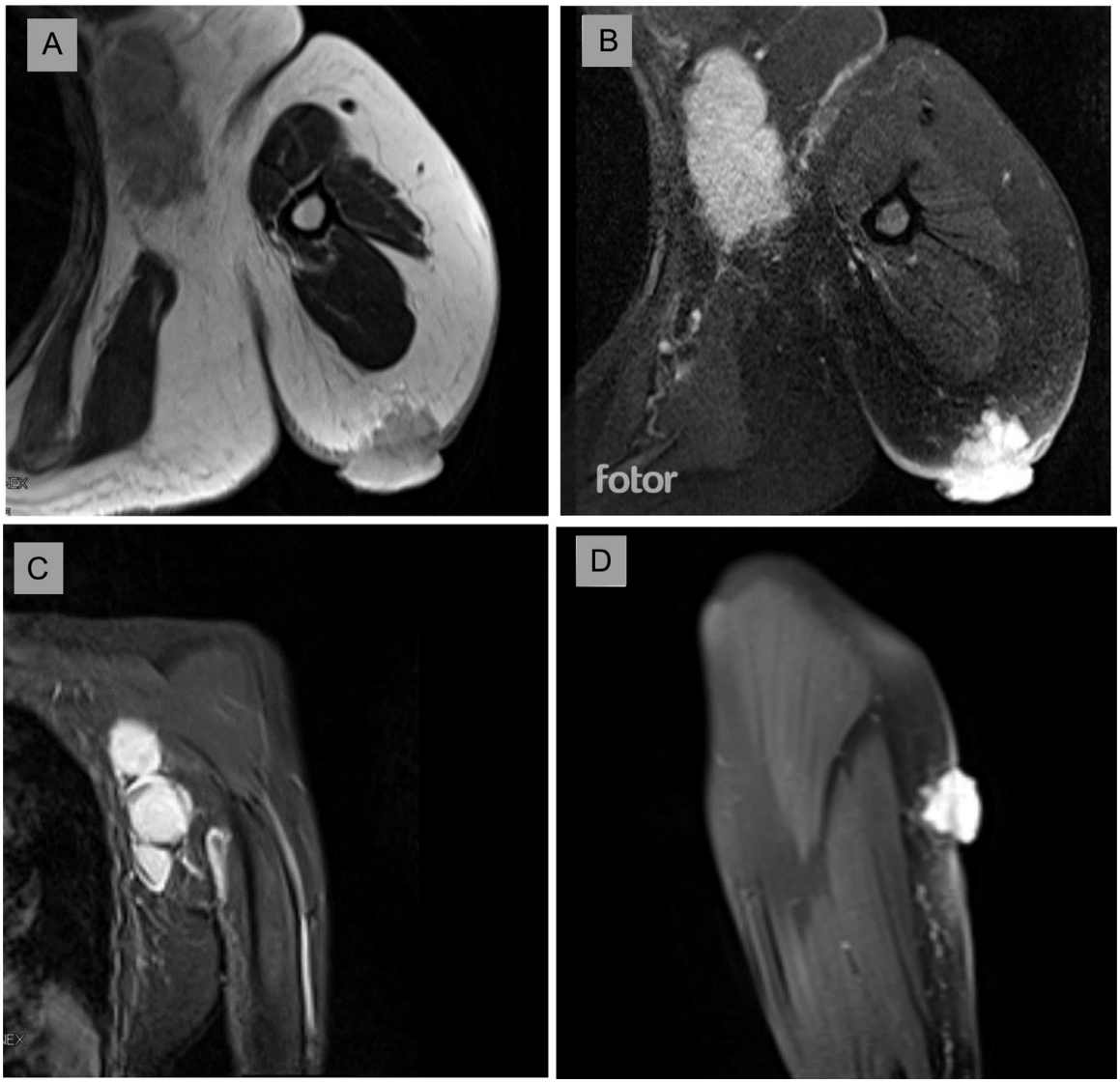

Fig 1 – Diagnostic imaging. Axial fast spin-echo T1-weighted MR nonfat saturation image of left shoulder (A) and Axial fast spin-echo T2-weighted fat-suppressed MR image of left shoulder (B) and coronal fast spin-echo T2-weighted fat suppressed MR image of left shoulder (C) and sagittal fast spin-echo T2-weighted fat-suppressed MR image of left shoulder. (A and B) showed a loblulated margin soft-tissue mass lesion within posterior mid-arm subcutaneous soft-tissue. (A-C) showed conglomerated axillary lymphadenopathy and diffuse skin thickening over dorsal aspect of mid-arm and axillary region. (D) showed involvement of skin and polypoid exophytic projection.

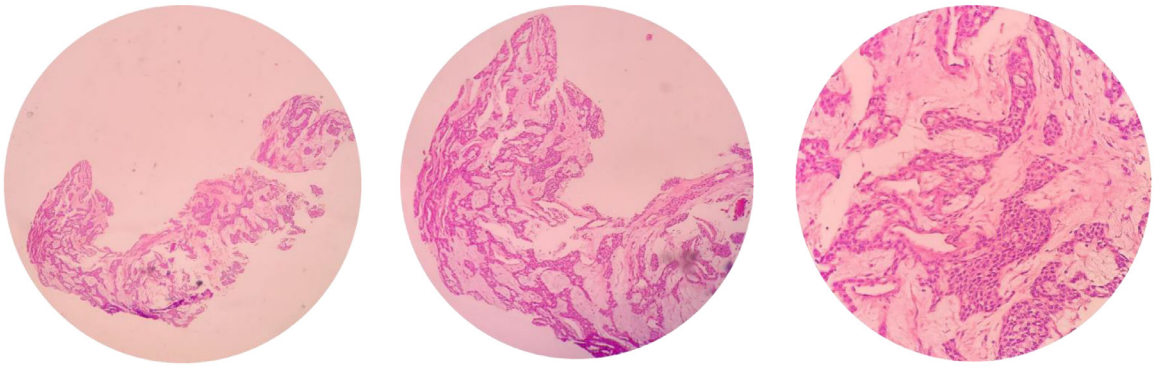

Fig 2 – Microscopic evaluation. revealed blood vessels in the dermis lined by normal endothelial cells that surrounded by a solid proliferation of round cells with round nuclei and acidophilic cytoplasm.

The patient is referred to a surgeon for further evaluation and management. The surgeon performed an open biopsy of the mass, for pathologic evaluation.

In macroscopic evaluation, there was irregular purple soft-tissue mass in size of 1 × 0.8 × 0.5 cm.

Microscopic evaluation revealed blood vessels in the dermis lined by normal endothelial cells that surrounded by a solid proliferation of round cells with round nuclei and acidophilic cytoplasm (Fig. 2). These findings indicated the diagnosis of Glomus tumor.

The patient undergone a surgical excision of the tumor, which had been found to be benign on histopathological examination.

Following surgery, the patient experiences complete resolution of her symptoms and has no evidence of recurrence on 24-month follow-up visits.

Discussion

Glomus tumor was first described by Wood in 1812 [8] as a painful tubercle in the skin and then Masson characterized its histopathological features in 1924 [9]. It accounts for 1%-5% of soft tissue mass in hand that most of them (about 75%) have subungual location [10]. It has female predominance also in middle age, although this is also found in male [11]. Glomus tumor present between 30 to 50 years old and starts to shrink and atrophied after the age 60 [1,12].

This tumor often presents with small bluish or purple nodule or skin lump with classic clinical presentation of pain, tenderness and cold temperature sensitivity. Although there are many reports suggesting that the extra-digital glomus tumor present with pain without temperature sensitivity [13], which is also compatible with our patient's clinical presentation. Between 20 and 50 percent of patients with GTs have a history of trauma [14] which was not noted in our case.

Although subungual region is the common site for GT, there have been documented cases of glomus tumors affecting various parts of the body including the breast, thyroid, heart, trachea, lung, mediastinum, esophagus, stomach, liver, small intestine, and colon and due to their atypical presentation and less common sites of occurrence, extra digital cases may be frequently missed [1].

The initial imaging test for diagnosing the GTs is ultrasound due to low cost and less time-consuming feature. It usually presents as a round or oval, hypoechoic, hyper-vascular soft tissue mass [11].

Magnetic resonance imaging (MRI) is the test of choice for diagnosis [13]. It typically shows a mass with low-signal intensity on T1-weighted images and high signal intensity on T2-weighted and postgadolinium Images. Small tumor may be missed in MRI and lead to false negative result and MRI has about 50% specificity for diagnosing the GTs [15]. It is usually difficult to differentiate between benign and malignant glomus tumor by imaging alone although there is just less than 1 percent risk of transformation to malignancy. Imaging should be combined with clinical symptoms and pathologic evaluation to confirm the diagnosis [16].

Arm glomus tumors can be easily misdiagnosed due to their atypical presentation [1]. Differential diagnosis of upper arm glomus tumors includes other soft tissue tumors such as lipoma, neurofibroma, schwannoma, and hemangioma [17]. In addition, glomus tumors can be confused with other conditions such as lymphadenopathy, hidradenitis suppurativa, and breast cancer and also paraganglioma [18].

In summary, glomus tumors are rare neoplasms that present with a classical clinical picture and can affect any part of the body. While the histopathologic diagnosis of this tumor is often not challenging, a lack of familiarity with it can lead to diagnostic difficulties. Complete surgical excision is necessary to achieve complete symptom relief and prevent recurrence. To avoid inadequate excision, a thorough preoperative assessment, including physical examination and imaging studies, as well as meticulous surgical technique, is recommended.

Patient consent

The written, informed consent for publication of their case was obtained from the patient.

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