Glomus tumor located in deltoid muscle

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Glomus tumors are benign soft tissue neoplasms arising from the glomus body, which are primarily found under the nail bed of the fingers. They are rarely located in other parts of the body. Only 8 cases of glomus tumors around the shoulder have been published in the literature. The purpose of this study was to present a glomus tumor located in the deltoid muscle in a 68-year-old male patient that was surgically treated by marginal excision. The patient remained asymptomatic, and no recurrence was detected at 2-year follow up.

Keywords: Glomus tumor; shoulder; surgical treatment.

Glomus tumors are benign soft tissue tumors arising from glomus body.¹⁻¹³ They were first described by Wood as a painful subcutaneous nodule in 1812, and a pathological description was made by Masson in 1924.⁴⁻⁷ Glomus tumors are most commonly found under the nail bed of the fingers. Localizations other than the hand are very rare.¹⁻¹⁰

To date, there have been only 8 cases of glomus tumors described around the shoulder in the literature.¹ The purpose of this study was to present this very rare case of a glomus tumor localized around the shoulder.

Case report
A 68-year-old man with a 1-year history of painful swelling around the shoulder attended to our department. Different medical treatment modalities had previously been applied, but his complaints persisted. During physical examination, he had a 2x3-cm swelling on the anterior part of his left shoulder. The mass was sensitive and painful to palpation. His complaints deteriorated with ice application. Plain X-rays of the shoulder were normal. Contrast magnetic resonance imagine (MRI) revealed a well-defined mass that was hypointense in T1-weighted images and hyperintense in T2-weighted images, with a dimension of 2x3 cm, located inside the anterior fibers of the left deltoid (Figure 1). Surgical treatment was planned because the lesion was symptomatic. The lesion was superficial, small, and well defined, and no reaction was observed in soft tissues around the lesion; therefore, direct surgical excision was planned without performing a prior biopsy. Written informed consent was obtained from the patient.

Under general anesthesia, the patient was placed in beach chair position, and a 4-cm longitudinal incision was made over the lesion, which was excised marginally.

Microscopic examination revealed that the tumor was well defined and possessed a complex vascular structure. The vessels were surrounded by cell clusters containing eosinophilic cytoplasm. The nuclei of the cells were round and small. Tumor cells represented widespread immunoreaction with vimentin and smooth muscle actin.
Diagnosis was made as glomus tumor according to these pathological findings (Figure 2a, b). The patient had no complaints immediately following surgery and remained asymptomatic during the 2-year follow-up period.

Discussion

Glomus tumors are benign soft tissue neoplasms arising from glomus bodies located in the dermis. Glomus bodies regulate body temperature by organizing skin blood flow.[1,2,7,8]

Glomus tumors are most commonly seen in the hand, especially under the nail bed. They may appear anywhere on the body, but localization other than hand is very rare. Localizations such as the forearm, triceps tendon, in front of the patella, and shoulder region have been described in the literature.[1,3,4,7,9] To date, there have

Table 1. Glomus tumor cases around the shoulder described previously in the literature.

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Anatomic localization</th>
<th>Gender</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boretto JG. et al.[8]</td>
<td>2008</td>
<td>Insertion side of deltoid muscle to humerus</td>
<td>Female</td>
<td>54</td>
</tr>
<tr>
<td>Gautam VK. et al.[13]</td>
<td>2008</td>
<td>Acromion</td>
<td>Female</td>
<td>25</td>
</tr>
<tr>
<td>Solivetti FM. et al.[12]</td>
<td>2002</td>
<td>Not attainable</td>
<td>Male</td>
<td>58</td>
</tr>
<tr>
<td>Yoshikawa G. et al.[10]</td>
<td>1996</td>
<td>Rotator cuff</td>
<td>Female</td>
<td>35</td>
</tr>
</tbody>
</table>
been 8 cases described around the shoulder region in the literature (Table 1). There have been 2 cases described in the literature around the deltoid muscle localization, 1 of which was in the posterior fibers of deltoid muscle and the other at the insertion of the deltoid muscle to the humerus.[1,2] Ours is the second case localized intramuscularly around the deltoid muscle region.

A period of 10–20 years until diagnosis has been reported in the literature.[2,5] With this report, we want to emphasize that glomus tumors should be considered in the differential diagnosis for shoulder pathologies which are commonly seen in orthopedic clinics.

The most important signs in the diagnosis of glomus tumors are pain, cold intolerance, and sensitivity to pressure and touch.[1,2,7–9] There were complaints of pain and sensitivity in our case, which lessened with cold application. It is easy to diagnose glomus tumors localized in the hand because of their typical appearance, but diagnosing glomus tumors in other localizations is very difficult. In the differential diagnosis, pathologies such as neuroma, rotator cuff pathologies, fat necrosis, and cystic lesions must be considered.[2]

Plain X-ray is generally normal in patients with glomus tumors. The lesions can be seen with MRI, which has a high sensitivity but low specificity.[2,6,7]

Conservative methods are usually inadequate in the treatment of glomus tumors.[2,3,8] Most patients with glomus tumors receive other forms of treatment prior to undergoing surgery. In our case, the patient received previous medical treatment, but his complaints persisted.

Marginal excision is sufficient as a surgical procedure. Complaints from the patient commonly cease immediately after surgery. Continuation of complaints after surgery may signify inadequate surgical excision. In our case, the patient had no complaints immediately after surgery, and he remained asymptomatic during the 2-year follow-up period. Recurrence is very rare and usually seen in cases of inadequate excision and when there are multiple localizations of glomus tumors.[8]

Glomus tumors are most commonly seen in hands but may be seen anywhere in the body. In the differential diagnosis of a painful and sensitive swelling, glomus tumor must be considered. MRI is useful in the diagnosis, and marginal excision is adequate in the treatment.

Conflicts of Interest: No conflicts declared.

References