



Case report

Osteoid osteoma of the distal clavicle[☆]



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ABSTRACT

The osteoid osteoma is a bone tumor that accounts for 10% of benign tumors. It was described in 1935 by Jaffe, as a tumor that affects the young adult population, with a predominance of males. This study aims to present a case of late diagnosis of a patient with osteoid osteoma of the distal clavicle region. Female patient, 44 years old, non-professional volleyball player, reported pain in the anterior and superior region of the shoulder girdle, specifically in the acromioclavicular joint, which worsened at night and had been treated for nine months as tendinitis of the rotator cuff and acromioclavicular joint arthritis. After confirming the diagnosis, the patient underwent open surgery with resection of the distal clavicle. At two years of follow-up, the patient presents without local pain. In the radiographic evaluation, coracoclavicular distance is preserved and there are no signs of recurrence. Tumors of the shoulder girdle are rare and are often diagnosed late. A high degree of suspicion for the diagnosis of tumors of the shoulder girdle is needed in order to avoid late diagnosis.

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Osteoma osteóide da clavícula distal

RESUMO

O osteoma osteóide é um tumor ósseo que corresponde a 10% dos tumores benignos. Foi descrito em 1935 por Jaffe, como um tumor que acomete a população adulta jovem, com predominância no sexo masculino. O objetivo do trabalho é apresentar um caso de diagnóstico tardio de uma paciente com osteoma osteóide da região da clavícula distal e relatar seu tratamento. Paciente de 44 anos, jogadora de vôlei não profissional, com dores na região anterior e superior da cintura escapular, mais especificamente na articulação acromioclavicular, as quais pioravam a noite e que era tratada havia nove meses como uma tendinite do manguito rotador e artrite da articulação acromioclavicular. Após confirmação diagnóstica, a paciente foi submetida ao tratamento cirúrgico aberto com ressecção da clavícula distal.

Palavras-chave:

Clavícula

Osteoma osteóide

Ombro

[☆] Study conducted at the Santa Casa de Misericórdia de Vitória, Departamento de Ortopedia e Traumatologia, Vitória, ES, Brazil.

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Atualmente a paciente encontra-se com dois anos de evolução sem dor local. Na avaliação radiográfica, a distância coracoclavicular encontra-se preservada e não há sinais de recidiva. Tumores ósseos da cintura escapular são raros e frequentemente são diagnosticados tardiamente. Deve-se ter um alto grau de suspeição para o diagnóstico de neoplasias da cintura escapular, a fim de evitar o diagnóstico tardio.

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Introduction

Osteoid osteoma is a benign bone tumor that accounts for 10% of benign tumors, representing the third most common bone tumor. It has a preference for the diaphysis of long bones, such as the tibia and femur. It was described in 1935 and later in 1953 by Jaffe; it is a tumor that affects the young adult population, in the second and third decade of life, predominantly in males.¹⁻³

The clinical presentation comprises mild to severe pain, predominantly at night, which is usually relieved by the use of salicylates. It can be located in any bone region, but half of cases involve the femur and the tibia.

Its presence in the region of the scapula and clavicle is extremely rare, with few reports in the literature. A literature search retrieved no cases described at the distal end of the clavicle.

This study aimed to present a case of late diagnosis of an osteoid osteoma of the distal clavicle region and to report its treatment.

Case report

A 44-year-old female, recreative volleyball player, presented with anterior and superior scapular girdle pain, more specifically at the acromioclavicular joint, which worsened at night; this condition had been treated for nine months as rotator cuff tendinitis and acromioclavicular joint arthritis. Pain was partially alleviated by salicylates. Patient denied a history of previous trauma or fall.

On physical examination, no edema, deformities, or atrophies in the region of the shoulder girdle were observed. Passive and active range of motion were normal, except for the fact that forced adduction was painful at the extreme end of the movement.

O'Brien test was positive in the semiological maneuvers and at the palpation of the acromioclavicular joint. Other tests for rotator cuff and instability were negative.

Patient underwent complementary examinations, through which the osteoid osteoma was evidenced, with its peculiar characteristics at the distal end of the clavicle at the acromioclavicular joint (Figs. 1-3).

Patient underwent open resection of the distal end of the clavicle (approximately 1.5 cm) in a way that did not compromise the insertion of the coracoclavicular ligaments; electrocoagulation with radiofrequency was performed due to bone bleeding (Figs. 4 and 5). Tissue sample was sent for histopathological analysis and the diagnosis of osteoid osteoma was confirmed (Appendix A1, in additional material).

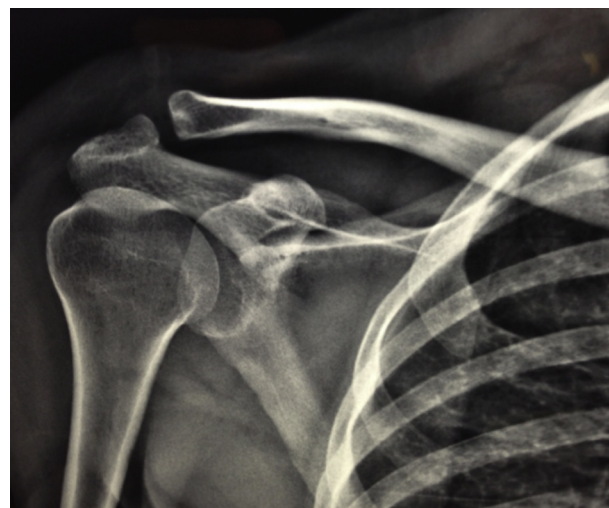


Fig. 1 – Anteroposterior view radiograph showing an area of sclerosis in the lateral distal region of the clavicle.

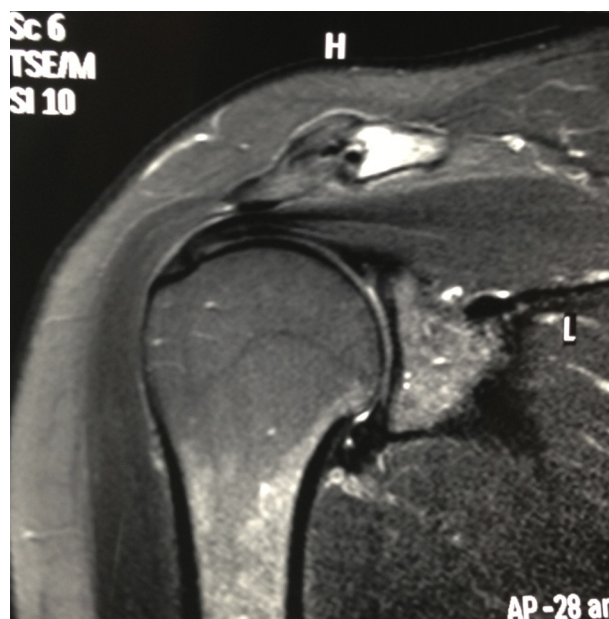


Fig. 2 – Magnetic resonance imaging (MRI) in coronal section showing image of the tumor together with intense edema in the lateral distal region of the clavicle.

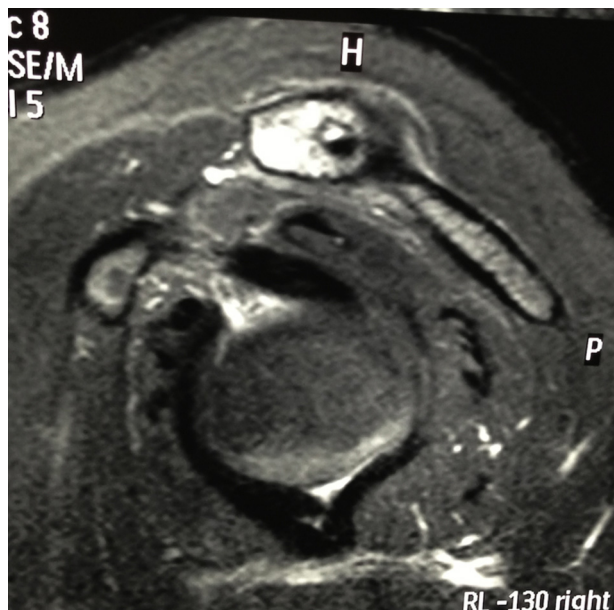


Fig. 3 – MRI in sagittal section showing the image of the nidus along with intense edema in the lateral distal region of the clavicle.



Fig. 4 – Photograph of the superior access route over the clavicle with the opened acromioclavicular joint and a curved Kelly forceps pointing toward the osteoid osteoma region.

In two months, patient evolved from a visual analog scale (VAS) score of 9 in the preoperative period to 1.

Currently, at 24 months of follow-up, she presents no local pain. Radiographic evaluation shows that the coracoclavicular distance is preserved and there are no signs of recurrence (Fig. 6).

Discussion

The clavicle is a rare location for tumors.⁴⁻⁶ Therefore, orthopedists have little experience in the diagnosis and management of tumors and neoplastic conditions of this bone. The



Fig. 5 – Photograph showing the osteotomy of the lateral distal region of the clavicle.

oncological characteristics of clavicle tumors resemble those of flat bones when compared with those of long bones. Tumors of the clavicle are mostly malignant; diagnosis is often late due to the low degree of suspicion of this pathology.⁷

Osteoid osteoma accounts for 10% of benign bone tumors, being more common in men and in the second and third decade of life.⁸ In the superior clunulate, the most common site of involvement is the proximal humerus. Among imaging studies, osteoid osteoma presents in radiographs as a radiolucent image with central calcification. Lesions in the spongy bone usually present as a small area of rarefaction with an area surrounded by sclerosis. Computed tomography aids in the localization of the tumor. Magnetic resonance imaging presents tumor changes as a low intensity signal at T1 and signs of variable intensity at T2-weighted. Although tomography is the study of choice, the edema surrounding the tumor and the bone marrow alterations are best observed with magnetic resonance imaging, as demonstrated in the present case.

Kapoor et al.² reported a case series of 12 tumors on the clavicle, the most common of which was Ewing's sarcoma; treatment ranged from partial claviclectomy to chemotherapy. In their series, those authors did not report a case of osteoid osteoma, despite reporting of a case with a rare periosteal desmoid tumor.

Only 1% of all bone tumors affect the clavicle.⁹⁻¹¹ The most common site is the acromial end, which is in agreement with the present case report. Miyasaki et al.¹² reported a case of osteoid osteoma in the acromion simulating pain in the acromioclavicular joint, which was resected arthroscopically and associated with an acromioplasty; patient had a complete recovery of range of motion and no signs of recurrence in seven years of follow-up. Degreeef et al.¹¹ also reported a case in which the acromion was resected through the Mumford arthroscopic procedure. In the present case, open resection was chosen due to the fact that this was a tumor, albeit benign, and this method facilitates the collection of material for histopathological examination.



Fig. 6 – Radiography on anteroposterior and profile views, in which excision of the distal fragment of the clavicle with the osteoid osteoma is noted.

Glanzmann et al.¹³ reported a case of osteoid osteoma of the coracoid simulating adhesive capsulitis, which was also resected by arthroscopy and electrocauterization through the rotator interval.

The natural course of osteoma may be spontaneous resolution over time; however, residual pain and persistent symptoms are indicative of surgery. Multiple treatment options for this tumor are available, such as drug therapy, percutaneous radiofrequency ablation, and surgical procedures involving complete removal of the nidus, which can be obtained by curettage, *en bloc* resection and, more recently, arthroscopy, with good results. Minimally invasive treatments, such as radiofrequency thermocoagulation and percutaneous excisional core biopsy, are the treatments of choice in many centers, avoiding the complications of open surgery. The main advantages of percutaneous techniques are faster return to activities, lower morbidity, and, in cases of osteoid osteoma of the spine, maintenance of stability. However, orthopedists should be aware of possible thermal lesions to neurological structures and, in cases of excisional biopsy, of incomplete removal of the tumor, which could lead to recurrence of symptoms and lesion.^{4,14-17}

In order to avoid late diagnosis, scapular girdle neoplasms should be considered in the diagnosis of refractory pain in the superior cingulate region.

Conclusion

The authors described a rare case of osteoid osteoma at the distal end of the clavicle. Despite the rarity, it is necessary to include neoplasms in the differential diagnoses of pathologies of the shoulder.

Conflicts of interest

The authors declare no conflicts of interest.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.rboe.2017.01.006](https://doi.org/10.1016/j.rboe.2017.01.006).

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