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Case Report Open Access

Non-typical Localisation of Osteoid Osteoma in the Acromion

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Abstract

The paper presents the clinical case of a 14-y.old female patient complaining on omalgia, in whom a focus of osteoid osteoma was diagnosed, localized in the acromion. The lesion was removed using the arthroscopic technique, achieving a complete disappearance of ailment.

Keywords: Osteoid osteoma; Omalgia; Arthroscopy of the shoulder joint; Non-typical localisation of a neoplasm

Background

Shoulder pain is a common reason for reporting to a doctor. Usually it is a result of a trauma, overload of the joint or osteoarthritis of acromioclavicular joint. However, in each case, and particularly when a reason is unclear or pain is non-characteristic, presence of a neoplasm has to be considered.

Osteoid osteoma is a benign bone cancer usually located in long bones. The condition was first described by Jaffe in 1935 [1].

Most commonly the neoplasm is localized in the proximal end or shaft of the femur and tibia. It may be also located in less typical sites, posing some diagnostic problems. Those rarely reported localizations include: the patella [2], the hallux [3], distal phalanx [4] or mandible [5].

The purpose of this paper is to present the case of a 14-y.o. female patient with diagnosed osteoid osteoma of the acromion.

Case Study

The 14-year old girl reported to her GP because of non-specific pain of the shoulder. Pain was focused in the area of the acromioclavicular joint and the acromion. Symptoms had not been preceded by a trauma or overload of the shoulder, and were intensified at night. Initially the patient was diagnosed in outpatient setting. Examination demonstrated the full range of motion of the shoulder, muscular strength of the rotator cuff was efficient, and no pain was observed in tests of muscles of the shoulder girdle. Additionally, a weak positive result of the Neer's test and a painful arch were present. Laboratory tests (including ESR, CRP) demonstrated no abnormalities. A standard treatment was applied initially: limitation of activity, NSAIDs, rehabilitation (stabilization of the rotator cuff, stabilization of the scapula). However that approach proved unsuccessful, an MRI was performed. The examination demonstrated segmental edematous changes of the osseous tissue of the acromion in the area of the acromioclavicular joint (Figures 1 and 2).

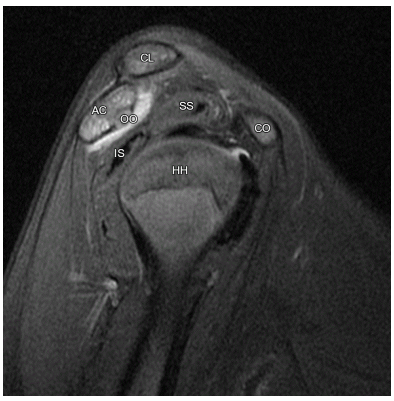

Figure 1: A focus of osteoid osteoma in the acromion. Image from the MRI-Sag PD (AC-acromion; CL-clavicle; CO-coracoid process; HH-humeral head; IS-infraspinatus; OO-osteoid osteoma; SS-supraspinatus).

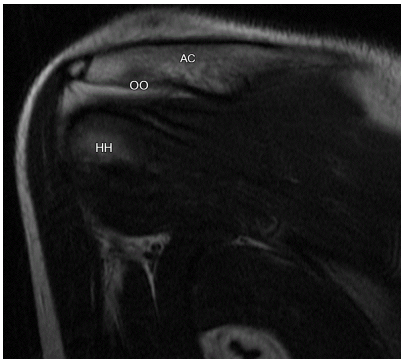

Figure 2: A focus of osteoid osteoma in the acromion. Image from the MRI-Cor T2 (AC-acromion; HH-humeral head; OO-osteoid osteoma).

Considering absence of characteristic radiographic features in the MRI, CT of the joint was performed (Figure 3). The presentation gave

rise to a suspicion of a lesion of a character of osteoid osteoma, non-osteogenic fibroma or osteoblastoma. The patient was qualified for biopsy. Three bone specimens were collected with a curette from the acromion.

Examination of specimens and the overall presentation of the disease were a basis for the diagnosis of osteoid osteoma. The patient was qualified for radical surgical removal of the lesion. Considering localization of the nidus on the inferior surface of the acromion, on the side of the acromioclavicular joint, the tumor was removed using the arthroscopic technique. The focus was curetted and material was forwarded for histopathological examination.

Control CT confirmed a radical removal of the lesion (Figure 4). In early post-surgical period the extremity was mobilized on a sling, with isometric exercises. As pain receded, mobilization was gradually increased. The extremity was fully mobilized after healing of surgical wounds. Already on first days after the surgery the patient reported radical alleviation of pre-surgical complaints. After healing of surgical wounds and rehabilitation symptoms disappeared completely.

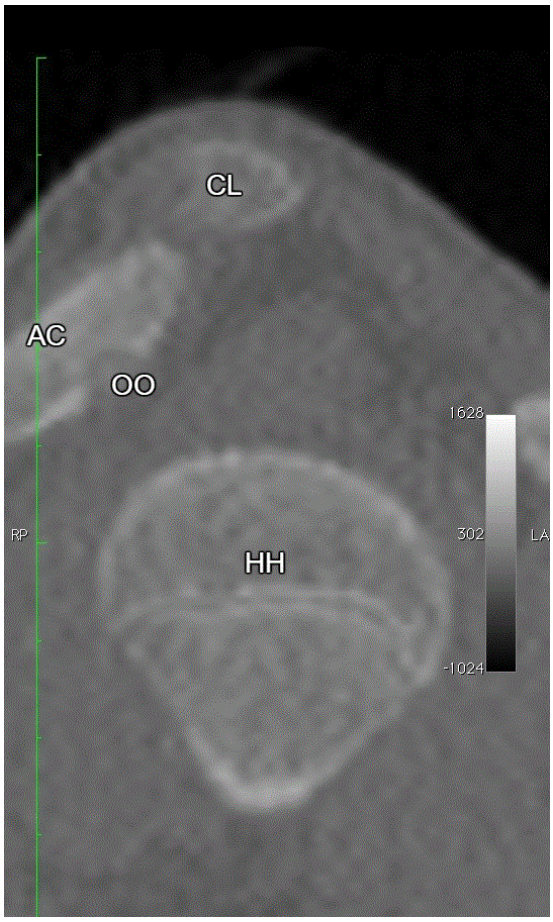

Figure 3: A focus of osteoid osteoma in the acromion. Image from the CT (AC-acromion; CL-clavicle; HH-humeral head; OO-osteoid osteoma).

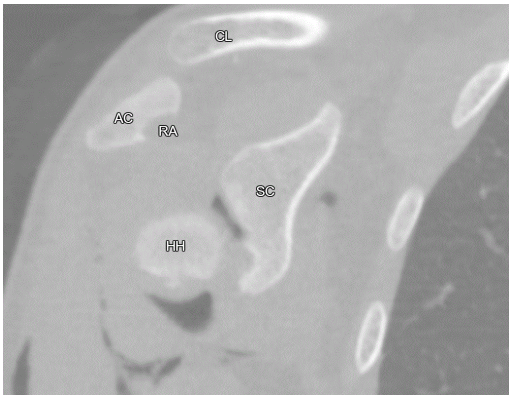

Figure 4: Post-surgical presentation after resection of a focus of osteoid osteoma from the acromion. ACT image (AC-acromion; CL-clavicle; HH-humeral head; RA-resection area; SC-scapula).

Discussion

Osteoid osteoma is a non-malignant bone cancer, constituting approx. 1:10 of all diagnosed cases of benign lesions [6]. The disease develops usually in young people, during the second and third decade of life. Their characteristic feature is intensification of pain at night, alleviated by acetylsalicylic acid. The lesion may be localized anywhere in the human osteoarticular system, including bones of the spine and skull. However, majority of lesions are localized in bones of the lower extremity [7].

The basic test used in diagnostics of osteoid osteoma is a radiograph. In case of doubts, the diagnostics may be extended by a CT and MRI. The cortical localization may appear as periosteal changes characteristic for malignant tumors. For that reason, osteoid osteoma has to be differentiated from malignant bone tumors, including osteoblastoma, as well as bone infection [8].

The only effective treatment is surgical tumor resection, often hindered by difficulties with localization of the lesion.

Shoulder pain is commonly associated with subacromial bursitis, pathologies of muscles of the rotator cuff, of the long head of the biceps, of the glenoid labrum or osteoarthritis of the acromioclavicular joint. The characteristic feature of complaints associated with pathologies of structures located in the subacromial space is their intensification at night, when compression of the deltoid muscle is not counteracted by gravity. Similarly, in bone cancer pain is intensified at night. Therefore cancer should always be considered as a cause of pain. The presented case indicates that pain may be also caused by a rare localization of a cancer that typically does not occur in bones building the shoulder girdle [9,10].

Radical resection of the lesion is confirmed by disappearance of pain, and the CT-confirmed area of resection. Trauma caused by the surgery, even minimally invasive technique, may lead to the development of osteoarthritis.

Conclusion

A typical clinical course of osteoid osteoma with characteristic radiological symptoms should not pose any diagnostic difficulties.

However, in cases of non-typical localizations, it may pose a risk of misdiagnosis. On the other hand, osteoid osteoma should always be considered in the diagnostics of pain, even if symptoms appear typical for a different condition. Radical resection leads to a complete cure.

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