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Osteochondroma of the scapula associated with a large bursa: About a case

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Abstract
Osteochondromas are one of the most frequent benign bone tumors, being its location on the scapula a relatively rare condition. Within their clinical presentation, they can be associated, among other things, with bursa formation. In this sense, we present a case report about an osteochondroma on the scapula associated with large bursa formation.

Keywords: Osteochondroma, bursa, bursitis, scapula

Introduction
Osteochondroma is one of the most common benign bone tumors. It is characterized by being and exostosis covered by a layer of cartilage. It's most frequent location is in the metaphysis of long bones, being the scapula a relatively rare location. There, they could be asymptomatic or present any of the following symptoms: pseudo-winging scapula, snapping scapula, bursa formation, chronic pain and bone deformity [1, 2].
In this regard, we present a case report of a scapular osteochondroma associated with a huge bursa formation.

Case report
A 23-year-old female who came to the Emergency Department due to increasingly-size tumor, reporting that the lesion had doubled its size in two months. As the only relevant aspect from her personal history, the patient suffered from Hodgkin's lymphoma in childhood, five-year evolution, without repercussions and discharged from Oncology Department at present. On physical examination, she presented a soft, fluctuating consistency collection, about 10-15 cm in diameter, on the lower angle of the left scapular that extended to the posterior axillary line (Figure 1).
Given these findings, an ultrasound and a chest X-ray are requested. Ultrasound showed a liquid collection suggestive of a seroma, measuring 13 x 16 cm, not complicated. The chest radiograph showed a radiolucent region with well-defined sclerous borders in the lower angle of the left scapula, with indirect evidence of soft tissue enlargement at the left paracostal level.
Subsequently, a computed tomography and magnetic resonance imaging were requested. They revealed the existence of an exophytic, sessile bone lesion measuring 2.6 x 1.7 x 1.8 cm (anteroposterior, transverse and longitudinal, respectively), covered by a 1.2 mm thick cartilaginous layer. The bone lesion does not erode the cortical the cortical bone and maintains cortical and medullary continuity with the adjacent bone. Depending on this bone lesion, there is a collection located between the left serratus muscle and the chest wall measuring 9.7 x 3.7 x 12.4 cm in the anteroposterior, transverse and longitudinal diameters respectively (Figures 2A-D). Three-dimensional CT reconstruction was performed (Figure 2E).
Given the progressive increase in size, the discomfort and the aesthetic defect referred by the patient, surgical treatment of the lesion was decided. Under general anesthesia, with the patient in prone position and the affected limb in forced internal rotation, we performed the approach over the medial scapular line. After blunt dissection of the fibers of the muscles trapezius and latissimus dorsi, spontaneous drainage of the collection occurs, obtaining a clear liquid with serous appearance, from which samples were taken for anatomopathological and microbiological analysis. Absence of tumor cells or microorganisms were described after

its study. Thanks to the internal rotation of the limb, we accessed the ventral aspect of the inferior angle of the scapula, achieving a complete exposure of the lesion. Macroscopically, a sessile lesion of approximately 1 cm in diameter is observed and a marginal resection of it was performed, making sure a total macroscopic resection of the associated bursa. Drainage was placed for 48 hours and the use of compression garments and analgesic sling was recommended for the first week.

Histologically, it was a tumor with a central zone of mature bone tissue with trabecular pattern, which was partially covered by mature fibrocartilaginous tissue, which showed focally reactive changes with a congestive and denuded synovial lining in other areas. The pathological study concluded that it was a bone tumor compatible with osteochondroma.

Results

As postoperative indications, the patient was recommended to use a compression bra and an analgesic sling during the first week. The first appointment for wound care took place one week after surgery, and regarding the excellent evolution of the wound, the staples were removed 15 days after surgery.

One month after surgery, the patient was asymptomatic, without new collections. The surgical wound preserved good appearance. She presented complete left shoulder joint balance, not painful. A new check-up of the patient was carried out six months and a year after surgery, after which the patient continues asymptomatic and, therefore, medical discharge was decided.

Discussion

Osteochondroma, or cartilaginous exostosis, is a benign chondrogenic bone tumor. It is a bony prominence covered by a layer of cartilage that maintains continuity with the cortical and medullary of the host bone[1]. It is considered one of the most common benign bone tumors, representing 33.4% of benign bone neoplasms and 10.1% of all bone tumors according to the Mayo Clinic series [2]. Its most frequent presentation occurs in the second decade of life, with a slight predominance in males, with a ratio between men and women (M:F) of 1.5:1 [3].

It is typically located in the metaphysis of long bones, especially of the lower limb, being the most frequent locations the distal femur, proximal tibia and proximal humerus, accounting for 90% of cases [3]. Less frequently it can be located in hand bones, feet, scapula and pelvis. However, it can grow from any bone with endochondral ossification [1, 2]. The scapula location accounts for 3-4.5% of cases [2]. On the other hand, scapula osteochondroma, mainly located on the ventral side, accounts 14.4% of all scapula tumors [4].

Osteochondroma may present as single sporadic lesions or as part of a hereditary multiple exostoses syndrome with mutations in EXT1 (8q24) or EXT2 (11p11) genes [1].

Clinically, they can be asymptomatic lesions or manifest as a palpable mass. On the other side, the can be associated with fractures, neurovascular compression, reduced range of motion and bursa formation. In addition, when located on the scapula, it can be associated with other symptoms such as pseudo-winging scapula and snapping scapula (syndrome consisting of pain and clicking when the scapula is mobilized) [3].

The formation of bursae is mainly related to the inflammation produced by mechanical stress produced by friction caused by repeated movements. Bursae can develop in two locations in the scapulothoracic region: on located between the serratus anterior and subscapularis muscles, and another located between the thoracic wall and the serratus anterior muscle, as it occurs in the case report we presented.

In terms of diagnosis, x-ray is the first complementary test to be performed. However, in the case of scapula osteochondromas, diagnosis using this technique can be difficult, and it must be considered as part of differential diagnosis to be able to request radiographs with adequate projections for the study of this location (anteroposterior and “Y” lateral projections of scapula). In plain radiographs, osteochondromas are visualized as pedunculated (narrow implantation base) or sessile (wide implantation base) lesions arising from the host bone surface, maintaining continuity with the cortical bone and its marrow. Computed tomography is very accurate to characterize these types of lesions when they are located in the axial skeleton. Magnetic resonance imaging is the most precise method for the study of these tumors, allowing, among other things, to analyze the thickness of the cartilaginous cap, which can help to differentiate a malignant transformation [1].

The treatment of these tumors, in general, is conservative, through clinical monitoring. In case of symptomatic lesions, surgical treatment may be considered. In this case, the surgery consists of performing a marginal resection of the lesion, which is curative in almost all cases.

The prognosis for these tumors is excellent. Recurrence usually occurs when the cartilaginous cap resection is incomplete, with a recurrence rate of 2% to 5.8% [5]. Its malignant transformation, more frequently to low-grade peripheral chondrosarcoma, occurs in less than 1% of cases of solitary lesions, increasing up to 10% in cases of hereditary multiple exostoses [1]. The most important criterion for suspecting malignancy is the presence of a cartilage capsule thickness greater than 2 cm (or greater than 3 cm in children). Other criteria to consider are: increased neovascularization, growth of a previously stable lesion, multiple recurrences, presence of radiolucent areas inside, irregular margins, destruction of adjacent bone and soft tissue mass with irregular calcifications [5].

Conflict of interest

The current research has not received specific aid from agencies of public sector, commercial sector or non-profit entities.

Figures and tables

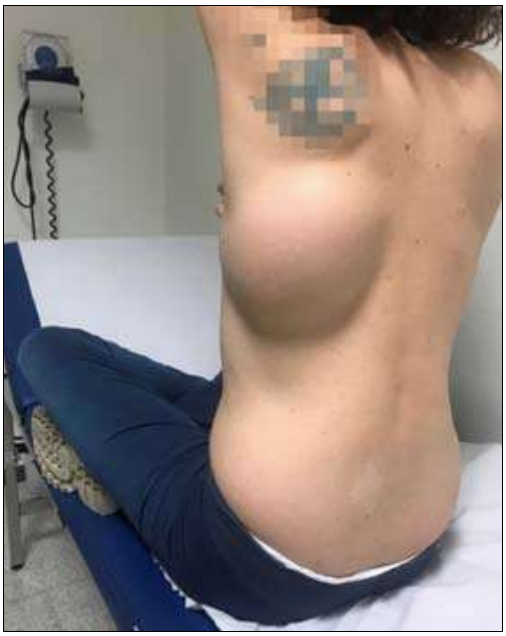
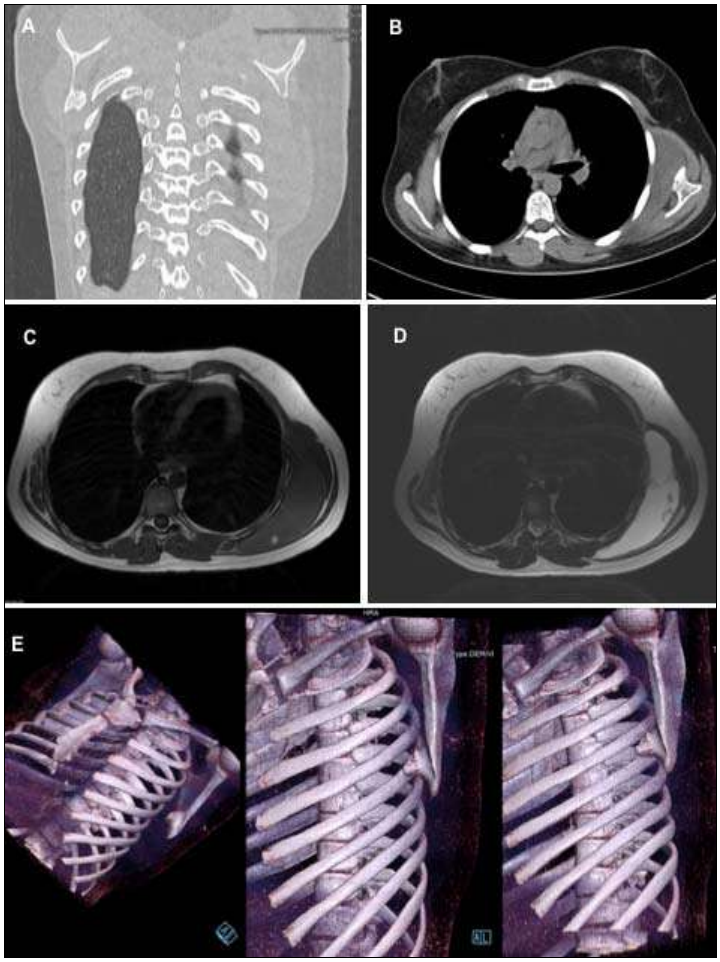


Fig 1: Clinical appearance



2A) Coronal section CT image. 2B) Axial section CT image. 2C) MRI, T1 sequence, axial section. 2D) MRI, T2 sequence, axial section. 2E) 3D CT reconstruction

Fig 2A-E: Radiological study

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