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Case Report

Reconstruction with non-vascularized fibular autograft after resection of clavicular benign tumor

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ABSTRACT

Chondroblastoma is a rare, benign cartilaginous neoplasm that accounts for approximately 1% of all bone tumors, and approximately 4% of all chondroblastomas arise in the clavicle. Here, we report a case of chondroblastoma in the right clavicle. 27-year-old female patient presented with a 12-month history of shoulder pain. Based on radiological and pathological examination, the diagnosis was compatible with chondroblastoma. After resection of the tumor, 1 cm of the distal clavicle was preserved, 15 cm of the non-vascularized fibula was taken from the contralateral leg and placed on the site of the clavicle and fixed with hook plate at distal clavicle and reconstruction plate attached to the sternum. 13 months of follow-up is scheduled for removal of osteosynthesis material, finding full consolidation of sternoclavicular segment and the distal segment. A good functional outcome was apparent after a limited 14-month follow-up, and the patient was highly satisfied with the result. We found no recurrence or metastasis.

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1. Introduction

Chondroblastoma is an uncommon benign bone tumor arising from a secondary ossification center. It usually occurs in adolescents and young adults and involves the tibia, accounts for approximately 1% of all bone tumors, and approximately 4% of all chondroblastomas arise in the clavicle. The purported neoplastic cell is the chondroblast, a cell that normally populates areas of secondary ossification. Rare cases have been reported in the talus, calcaneus, and many of these involve metacarpals or metatarsals, which may lack a true anatomic

diaphysis.¹ Although the lesions frequently are treated satisfactorily with intralesional procedures, such as curettage, they are sometimes very aggressive locally and require marginal or wide resection. A total claviculectomy is the procedure of choice if a definitive cure is the goal for clavicular tumors.^{2,3}

2. Case

A 27-year-old female patient presented with a 14-month history of shoulder pain, pain and palpable mass in the right clavicle region, and pain on movement of the shoulder, mainly

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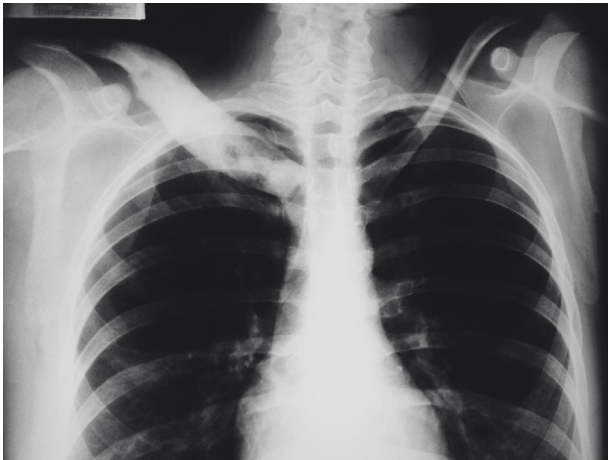


Fig. 1 – Thoracic X-ray. Circumscribed lesion in the right clavicle.

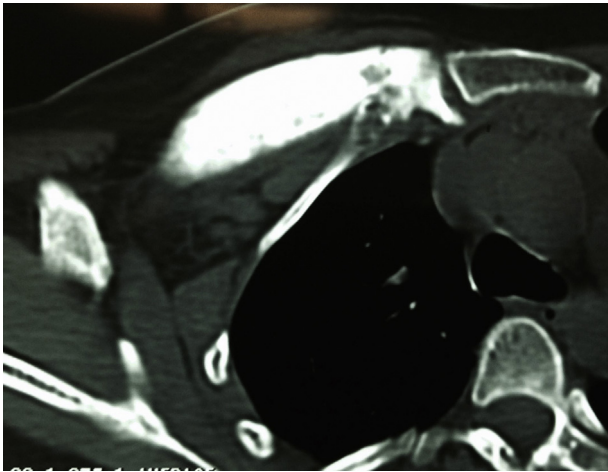


Fig. 2 – CT scan – sclerotic margins and lytic appearance.

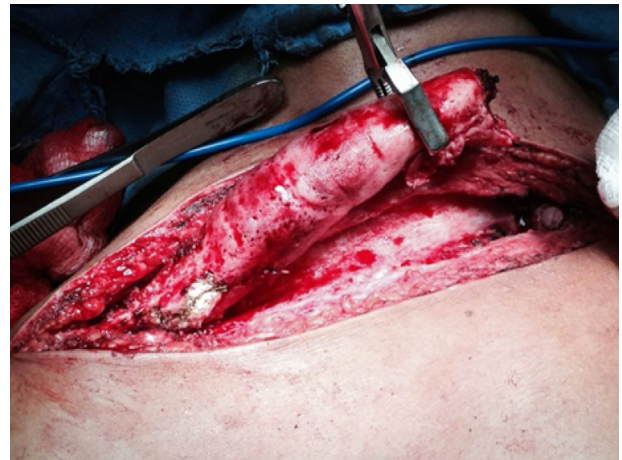


Fig. 3 – Intraoperative resection.



Fig. 4 – Fibular autograft.

flexion and abduction. There was tenderness in clavicular region and distal sensitivity was preserved. Plain radiograph and CT scan show circumscribed lesion with sclerotic margins and lytic appearance inside without periosteal reaction (Figs. 1 and 2).

Incisional biopsy was performed for histopathological examination. Reports revealed chondroblastoma. She was scheduled for surgery, performing tumor resection, leaving 1.5 cm of distal clavicle unaltered and complete resection of the proximal segment (Fig. 3).

Reconstruction of the defect is performed with autologous non-vascularized fibula and fixed with hook plate in the distal segment and reconstruction plate attached to the sternum. Decortication around the fibula is made and demineralized bone matrix is placed in distal and proximal segment (Figs. 4 and 5).

In the immediate postoperative the patient reports, mild pain, distal sensitivity unaltered, muscle strength decreased by pain, is discharged after 3 days (Fig. 6).

13 months of follow-up is scheduled for removal of osteosynthesis material, finding full consolidation of sternoclavicular segment and the distal segment (Fig. 7).



Fig. 5 – Fibular autograft attached to the distal clavicle and sternum.

Follow-up at 14 months, limitation of abduction, 80 degrees, flexion 90, extension 20 (Figs. 8 and 9), all this without pain and that does not stop their daily activities, the limitation of abduction, further the wide resection, can be

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