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Fperiosteal Chondroma of Scapula: A Case Report

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Abstract: Periosteal chondroma is an unusual benign cartilaginous tumor. We presented a case who had periosteal chondroma of the scapula. Except this, one case with periosteal chondroma of the scapula was reported in the literature so far. The treatment included curettage of the lesion and grafting with the autologous iliac bone chips. However, recurrence was detected four months postoperatively. Second operation was carried out that included marginal excision and grafting with autograft and allograft combination. Finally, the patient recovered completely following second intervention.

Key words: Periosteal chondroma, scapula

INTRODUCTION

Periosteal chondroma is a rare benign cartilaginous tumor. It arises from the deep layer of the periosteum. Periosteal chondroma is a true neoplasm instead of a developmental lesion: it continues to increase in size after skeletal maturity. Clinically, this tumor is usually asymptomatic: it presents as a painless mass that is discovered incidentally either in radiographic or in clinical examination. The hands and feet (40%) and long bones (55%) are most often affected. Other sites include the spine, pelvis, and ribs. Their age are generally under 30 years and range from 10 to 19 years. Males are the mostly affected[1].

When we reviewed the literature, we found one case with periosteal chondroma of the scapula had been published in 1989[2].

Our case was a 4-year-old boy. He had pain and decreased left shoulder motion since a year. There was no family history of any severe diseases. Also, he did not sustain with any severe diseases.

He declared that he had fallen on his shoulder prior onset of the symptoms. Meanwhile, his family accused a antituberculosis vaccine that was applied on his left shoulder earlier.

His family declared that his pain worsen at the nighttime or with his shoulder movements. He explained that the pain localized anterior of the left shoulder.

Physical examination revealed that his active and passive left shoulder movements were painful and he was reluctant to elevate his shoulder. In addition, one centimeter muscle atrophy of the left arm was observed compared with the right arm. Plain radiographs showed that one centimeter craterlike rounded lesion associated with the rind of host bone sclerosis that oriented on just medial of the glenoid humeri of the left scapula (Fig. 1). CT scan showed its exact location and MRI revealed extent of the tumor as well as its location (Fig. 2).

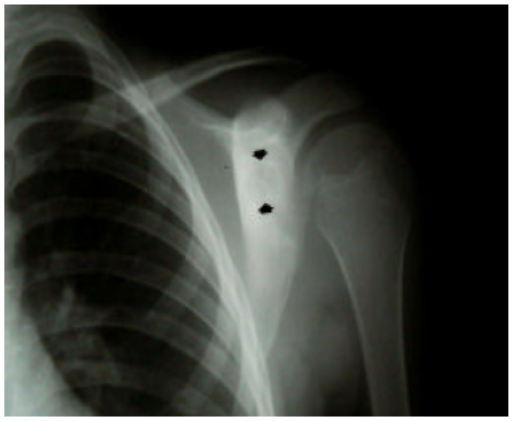

Fig. 1: Radiographic appearance of the case showing periosteal chondroma lesion on scapula.

Operative procedure was performed via anterior approach that included curettage of the lesion and filling the gap with autologous iliac bone chips. Pathological tissue contained curettage material as well as pieces of adjacent intact bone. All specimens were examined by

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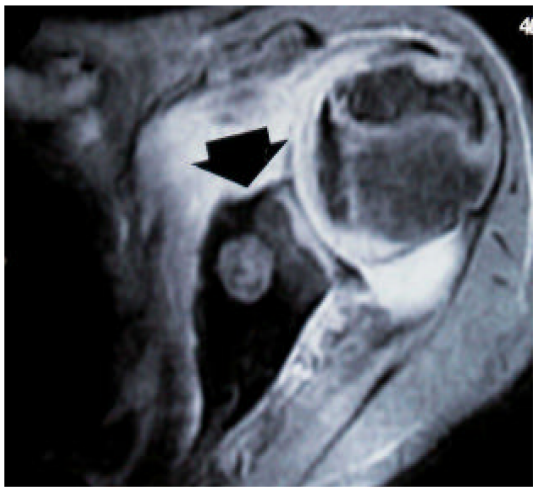


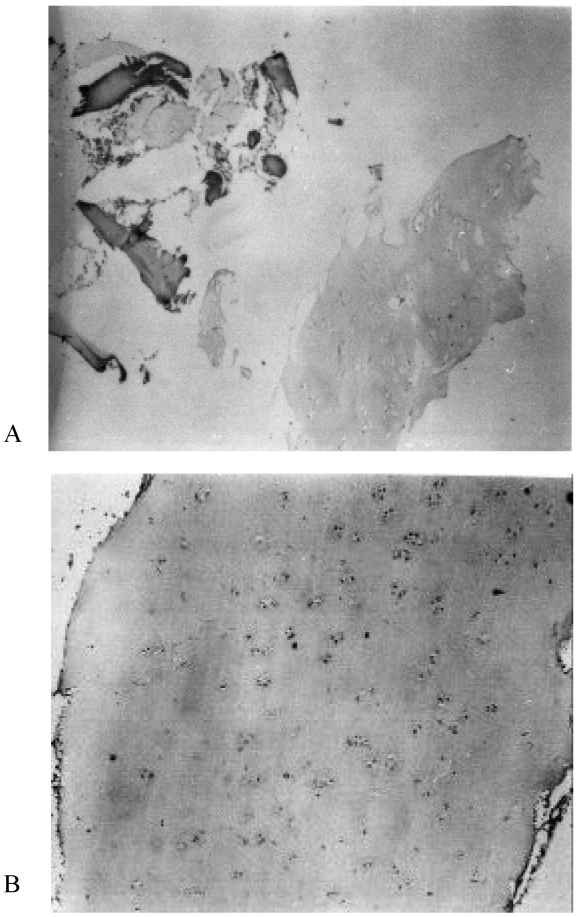
Fig. 2: MRI appearance of the case. Note extent of the tumor

light microscopy. The islands of cartilaginous tissue with lobuler apparance around the lamellar bone that relatively involve into the bone marrow were observed. Those included double nucleated-chondrocytes in the gray chondroid matrix which were in variable sizes. Some of them had a relatively high degree of cellularity (Fig. 3 A and B).

At the first day postoperatively, he expressed that he had no pain except disturbing of the wound. At the third week after surgery, he was allowed to full motion of his left shoulder. Four months later, he suffered moderate pain. Plain radiographs and CT scan revealed that there was a recurrence of the tumor. Marginal excision and grafting with combination of iliac crest autologeous graft and allograft were performed at that time. Because of small bone stock in the iliac crest and large defect created in the scapula, allograft was added as well. Two and half years after surgery, no evidence of recurrence was detected. He had no pain and he had full motion of left shoulder.

DISCUSSION

Periosteal chondroma is a rare condition, its incidence is known as 0,05%[1]. In 1925 Keiller[3] published the report of cartilaginous tumours. He described a man with a cartilaginous tumor of the toe that was named subperiosteal epiphyseal chondroma. Roberts[4] named as eccentric chondroma to the similar case in 1937. Mason[5] described cartilaginous tumor of the phalanx which was called as periosteal chondroma at the same time. Lichtenstein and Hall[6] published six cases with periosteal chondroma in 1952. Jaffe[7] described nine more cases and he named as juxtacortical chondroma. Afterwards, a few [l]cases were reported[8-13]



A

B

Fig. 3: Histological view (A) Lobular feature of the tumor. (B) Double nucleated chondrocytes in the gray chondroid matrix (H and E)

Bening tumors of mature hyalin cartilage (chondromas) are usually located centrally in bone are known as enchondromas, less frequently they are located subperiostally and are known as periosteal chondromas. Chondromas are less common than osteochondromas[14]. Periosteal chondroma usually involves of the long bones[8,15]. Lorente Molto *et al.,*[11] demonstrated that their cases were under 10 years of age and all involved of the long bones of the upper limb. Involvement of the hand was shown in some publications[10,15,16]. Ahyai and Spoerri [17] demostrated very unusual case who had intracerebral chondroma. Scapula involvement of periosteal chondroma was known in only one case in the literature so far[2].

Most cases who have periosteal chondroma are asymptomatic,however, they are diagnosed incidentally if the mass is palpable or during on unrelated radio graphic examination[18]. On the contrary, Boriani *et al.,*[8] demonstrated twenty cases who had

moderate pain. Having pain indicates that the tumor grows and may be malignant. However, periosteal chondromas contain many atypical cells and still be benign[14]. Savornin et al suggested[16] that differential diagnosis with a malignant lesion might be extremely difficult.

Radiologic apperance shows a juxtacortical lesion is eccentric and is located beneath the periosteum on a well-defined cortical defect. Plus, CT scan and MRI must be taken to understand its exact location, depth of the crater and extent of the tumor.

In differential diagnosis, Ollier's disease should be hold in mind which is known multiple enchondromatosis [14]. However, Ollier's disease is associated not only with enchondromatous lesions, but also with radiologically evident periosteal chondromatous and subcortical articular lesions[1]. Also, periosteal chondroma should be distinguished with periosteal chondrosarcoma. But sometimes the distinction a periosteal chondroma and a grade-1 periosteal chondrosarcoma is undeterminate[8].

Treatment should be considered as surgical management, however, marginal excision is the treatment of choice[8,14,18]. Conversely, Rankin *et al.,* [13] suggested that their case did not recur six years after curettage.

Lewis *et al.,*[9] described ten cases; the treatment included marginal or intralesional excision. No recurrence was reported.

As a conclusion, we presented second case with periosteal chondroma of the scapula so far. The curettage and grafting was the treatment of choice, however, the recurrence was detected 4 months after surgery. Second operation included marginal excision with grafting. Finally, the patient recovered completely following second inervention. We believe that intralesional excision or curettage should be avoided so that recurrence is frequent.

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