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Osteochondroma of the proximal humerus : A case report

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Abstract: *Exostosis or osteochondroma is a benign tumor that may be asymptomatic and is usually discovered by chance, the symptomatology most often would be that of a complication. The risk of transformation malignant must be evaluated by MRI by measuring the thickness of the cartilaginous cap. We report the case of an exostosis of the proximal humerus whose symptoms are linked to a dynamic conflict of the tumor, particularly during external rotation movement, associated with a cuff with a thickness of 17 mm, raising the suspicion of the probability of malignant transformation. The treatment has consisted in a resection in monobloc of the tumor. The objective of this case report is to describe the clinical management of this rare disease of the upper member.*

Keywords: Osteochondroma, Exostosis, Proximal humerus, Tumor, benign.

Introduction

Exostosis or osteochondroma is the most common benign. It corresponds to a well differentiated bone outgrowth, produced by cap germinal cartilage during growth [1]. The most frequent locations are the long bones, where the topography is initially metaphyseal and then gradually migrates towards the diaphyseal region due to the subsequent lengthening of the distal portion of the bone. The exostosis consists of well-differentiated bones, in perfect continuity with the supporting bone (cortical and cancellous contents), but may include more or less calcified cartilaginous residues. The cap which is cartilaginous in age adulthood, almost always less than 10 mm thick, and more often less than 5 mm (it may even disappear).

The main sites are bones with rapid endochondral growth, in particularly the distal femur (25%), proximal humerus (18%) and proximal tibia (14 %) [2]. This report describes the case of a patient with exostosis of the proximal humerus who underwent surgical resection.

Observation

Patient DM 17 years old, with a history of well controlled asthma, and presented with a painless swelling that had been evolving for 3 years and gradually increasing in volume, while maintaining her general condition (Fig. 1).

The external rotation was limited to 30 degrees, with no signs of inflammatory of venous circulation and no downstream vascular nervous deficits. The clinical examination revealed a 6 cm long swelling on the posterior aspect of the right arm, fixed in relation to the deep pain and mobile in relation to the superficial plane.

The radiological assessment, based on an X-ray of the shoulder, showed the presence of mixed metaphyseal - diaphyseal image, pedunculated on the postero-medial part of the proximal humerus (Fig.2).

Fig. 2: Outgrowth located metaphyseal - diaphyseal part of the right humerus, with a sessile base whose cancellous bone is

continuous with that of the weight bearing-bone and the countour with the diaphyseal corticals, and corresponding sinuous cap and corresponing cottony appearance.

An MRI scan revealed a 5.4*36*48cm lesion process with cancellous bone and cortical bone in continuity with supporting bone. The cartilaginous cap was measured at 17.5mm, pushing back the triceps muscle without invasion (Fig. 3).

Fig. 3: MRI of the right arm

The decision of the multidisciplinary consultation meeting was to perform a resection of the mass. The surgical approach was via the posterior aspect of the arm, with discision of the deltoid muscle between between the middle and posterior fascicles. The

exploration revealed a lime-blosson tumor with a whitish cap corresponding to the germinal cartilage, and monobloc of a resection of the tumor was performed, shaving the implant base and sending th

Fig. 4:

A radio

Fig. 5: A radiological control after resection of the tumor and postoperative clinical presentation

Discussion

Osteochondroma or solitary exostosis is the most common benign bone tumor [1]. The common exostosis is a well-differentiated bony outgrowth that develops on the surface of the bone through a process of enchondral ossification: the exostosis is in fact covered a layer (cap) of the germinative hyaline cartilage that produces its development through a process similar to that of the conjugation cartilagesv [2]. Solitary exostosis may arise as a result of a salter Harris fracture in the pediatric population, post-surgical or following irradiation [3]. The graph of the exostosis parallels that of the squeletone as a whole and ceases with the end of physeal activity. The main sites are bones with rapid enchondral growth, in particular the distal femur (25 %), the proximal humerus (18 %) and the proximal tibia (14%). Localisations in the lower limbs are twice as frequent as in the upper limbs. The radiological appearance and CT scan showed that the exostosis cortex is in continuous with that of the supporting bone. The center of exostosis is in continuous with medullary cavity supporting bone. The vertex showed variable content (sometimes islands of calcified ± cartilage) and regular or irregular surface. MRI showed perfectly the continuity between the exostosis content and the medullary cavity of the weight-bearing bone, and provides excellent visualization of the hyaline cartilage cap. Often discovered chance, clinical manifestations may be due to an increase in size with vascular-nervous compression or to a complication such as a fracture (very rare) or malignant transformation. Assessing of the thickness of the cartilage cap is therefore essential for the diagnosis of its malignant transformation. In a simple exostosis, the thickness is less than 1 cm and almost always less than 5 mm in adults (Beyond 2 to 3 cm thickness), it is almost always a case of malignant transformation and between 1 and 2 cm, the two possibilities are simple exostosis or malignant transformation [4]. Malignant transformation is the most serious complication, she occurs in 1% of cases [5]. The line treatment remains conservative with monitoring. Surgical treatment will be considered when the lesion becomes symptomatic causing pain, inflammation or reduced joint amplitude [6].

Conclusion

Osteochondroma is the most common benign bone tumor, with a prevalence that is difficult to estimate due to its usually asymptomatic nature. It accounts for of benign bone tumors, and of all bone tumors. It is a bony outgrowth of an island of ectopic growth plate, which grows and matures according to a normal enchondral ossification process. Any bone can be affected, but in of cases, the most common locations is the methaphysis of the long bones, with a predilection for the distal femur (30 %), the proximal tibia (20 %) and the proximal humerus (17 %). Osteochondroma could be at any age, developing during growth, with the risk of sarcomatous degeneration increasing from the age of 25-30.

Conflicts of interest

The authors declares no conflict of interest.

Ethical approval

The oral informed consent were sought from the patient in this study.

Contributions of the authors

All the authors have contributed the writing of this manuscript, and all have read and approved the final version.

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