

Pathological Fractures from benign tumours (About 27 cases)

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Abstract: A pathologic fracture occurs when a destructive processes cause defects in the bony architecture. It frequently reveals a benign bone tumor. Fractures in benign tumors pose diagnostic problems and thérapeutiques. We have tried through a retrospective inform therapeutic management and diagnostic study. It has been demonstrated that taking into account our results and theoretical considerations, the treatment of tumor ultimately should not be changed completely by the fracture : The choice between conservative treatment, curettage graft resection and reconstruction contention depends on the displacement, the siege of zone bearing or not, the nature of the tumor and local recurrence.

1 INTRODUCTION

A pathologic fracture occurs when a destructive processes cause defects in the bony architecture. Most of benign bone tumors were revealed and complicated by pathologic fractures. These tumors continue to pose problem in diagnostic , therapeutic and prognostic. Our study is a retrospective analysis of 25 cases of adult patients with pathological fractures. The aim of our study is to reveal the diagnostic and therapeutic difficulties that affect prognosis

2 MATERIALS AND METHODS:

Our study is a retrospective analysis of 25 cases of adult patients with pathological fractures treated at the University Hospital of Rabat during the period 2008-2012.

The clinical and radiological follow-up is for a decline of 2 to 6 years (mean follow-up was 36 months).

3 RESULTS:

The average age is 40 years. Female predominance is clear with 64% of women. The tumor was revealed in 91% of cases by fracture . Therefore, we found functional impairment, pain and vicious attitude. The most common radiology appearance is lytic image , but sometimes is condensing (osteoid osteoma) and mixed in some cases. In cases of giant cell tumor or aneurysmal bone cyst, we can find a soft tissue invasion. The tumours seat in the lower limbs in 19 cases with 70% in descending order (Femur: 13 cases, Tibia: 4 cases, Fibula: 1 case, Hock: 1 case), the upper limb in 8 cases with 30% in descending order (hand: 5 cases, Humerus: 2 cases). It should be noted that of the 10 cases of giant cell tumors, 6 of them siege at the lower end of the femur. In parallel, 5 of the 6 cases of chondromas seat at hand.

Histological data: Among the 25 cases

10 cases of giant cell tumors

6 cases of chondroma

5 cases of solitary bone cyst

3 cases of aneurysmal bone cyst

2 cases of non-ossifying fibroma

One case of fibrous dysplasia

One case of osteoid osteoma

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The treatment is definitely surgical, it consisted of a simple curettage - grafting and fixation with different materials (nails, pins, blade plates). Resection-arthrodesis of the knee was performed in one patient with a giant cell tumor near the knee, and resection of the distal half of the 4th P3 phalanx was performed for a chondroma. Our results are satisfactory, as we noted only one case of recurrence observed 6 months after treatment of giant cell tumor of the knee and was nominated for an amputation. Furthermore all our patients consolidated with a good functional outcome.

4 DISCUSSION:

On the seat of the fracture, we observed a predominance of chondromas at hand (83.5%) whereas usually this location does not exceed 50% Fracture often reveals chondroma because of the size and low bone mass of these small bones. Meanwhile, in agreement with the literature data 65% of solitary bone cyst sit at the proximal metaphysis of the humerus (1), the four cases we have identified had this seat. Therapeutically on declines up to six years we have noted that 1 single case of tumor recurrence occurred 6 months after treatment of giant cell tumor of the knee. For these tumors, these recurrences are to be expected especially in the first 2 or 3 years after operation (2,3). The results reported in the literature are around 30% (3). They are more related to the type of conservative treatment or not to radiological or histological appearance of the tumor. Tomeno reported a recurrence rate of:

- 0% after wide excision or amputation
- 25 to 40% after classic curettage graft . Surgical treatment for these tumors is indisputable. However, these treatment modalities should be discussed (3,4). It is not the same for aneurysmal bone cyst. Some authors preferred to operate this humeral tumor just in case of large displacement fracture Whereas in the femur ,especially when seat bearing zone that weakens notably cervical with a high risk of cervical cephalic necrosis (5),. Furthermore, if the size of tumor is upper than 1/8th the size of the bone (6). In this case the tumor must be operated Moreover, the presence of a benign tumor whatever its nature does not seem to influence the evolution of the fracture or its period of consolidation (7) Taking into account our results and theoretical considerations, the treatment of tumor ultimately should not be changed completely by the fracture : The choice between conservative treatment, curettage graft resection and reconstruction contention depends on the displacement, the siege of zone bearing or not, the nature of the tumor (7) and local recurrence (8).

5 CONCLUSION:

Pathological fractures frequently reveal a benign bone tumor. At this stage, it is imperative to know the exact nature. It should therefore be able to determine the radio-clinical profile of the tumor in order to ask the indication for surgical biopsy. It is necessary except for the typical essential bone cysts. For essential or aneurysmal bone cysts small, treatment depends on the usual parameters of the fracture. In other cases, curettage biopsy diagnosed transplant is required. For giant cell tumors and other benign tumors with risk of degeneration, extra-lesional resection after histological evidence should be considered.

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FIGURES

Patient 1: Figure a and b : Giant cell tumor of the lower end of the femur. Figure c and d : Curettage - filling with cement and restraint by



Patient 2: Figure a : radiography of the knee showing the result of surgical treatment (curettage-Filling bone graft + cement + plate fixation target) and control after two ra months. Figure b: radiography after 6 months showing recidivism

