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Indication to the osteosynthesis associated with curettage in benign and malignant bone tumors

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INTRODUCTION: The bone cavity remaining after the curettage of the neoplastic lesion often requires the use of filling systems able to ensure mechanical stability to the system. The literature analysis shows that the routine filling of curetted bone lesions does not appear to be necessary from a mechanical point of view and no biomechanical testing has been done to assess fixation techniques in pathological fractures.

OBJECTIVES: Evaluate according to the size of the bone defect, the region of the injury, the need to use with acrylic cement and bone substitutes an additional systems such as osteosynthesis to guarantee a mechanical stability of the bone.

METHODS: We analyzed twenty bone lesions localized in femur or humerus treated with curettage associated to the osteosynthesis

RESULTS: The malignant lesions were treated with extended curettage with use of high speed cutters and liquid nitrogen filled with acrylic cement while the benign lesions were treated with curettage filled with synthetic bone or acrylic cement associated with osteosynthesis with plate and locked screws. The analysis showed no recurrence of the lesion, no infection, two cases of stiffness of the knee. Three patients treated with only curettage had a fracture and therefore they underwent to osteosynthesis with plate.

CONCLUSION: The curettage with bone grafting or bone replacement or cement is not always recommended in the treatment of bone tumors. The loss of bone mass after curettage requires to fill this lesion to give stability to the bone.

There are no data in the literature that demonstrate the extent of the size of a lesion that require the osteosynthesis. PMMA is recommended in benign aggressive and malignant lesions of low grade. In our opinion, the filling is essential in the large lesion to ensure a mechanical support. In our opinion an adequate exposure and an accurate curettage is essential but required an osteosynthesis in large lesions (> 5 cm), in lesions localized in distal femur, in lesion in loading areas, in obese patients, in case of use of adjuvants local, in case of a very large windows bone to do the curettage and if the patient needs of an high functional requirements

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