

A HUMERAL PATHOLOGICAL FRACTURE AS FIRST MANIFESTATION OF MULTIPLE MYELOMA. SURGICAL TREATMENT BY THE USE OF BONE ALLOGRAFT INSTEAD OF CEMENT.



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PURPOSE : We present the rare case of a multiple myeloma diagnosis on occasion of a humeral fracture as first manifestation. We focus on the altered operative technique performed by which bone allograft replaced the standard filling agent of such cases, cement

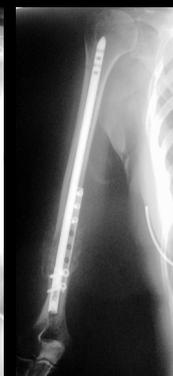
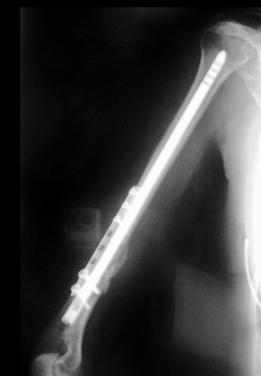
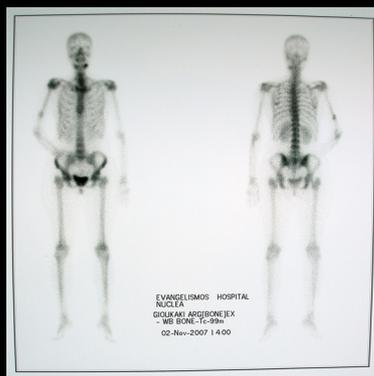


Fig. 1-2
Pre-operative X-Rays of a right humerus pathological fracture.

Fig. 3
Bone Scan examination indicating the lesion at the distal third of the right humerus.

Fig. 4-5
Post-operative X-Rays of the right humerus pathological fracture. Treatment was achieved by combined retrograde intramedullary nailing and plating of the fracture

Fig. 6-7
One month post-operative X-Rays of the pathological fracture showing the consolidation of the bone allografts.

MATERIAL & METHODS : A 40 years old female patient presented with pain at her right arm after a fall. The radiographic control revealed a non-displaced fracture at the distal third of the right humerus on the ground of an osteolytic lesion with malignant characteristics (Fig. 1-2). A bone scan with Tc-99m was conducted (Fig.3) which displayed a pathological foci at the distal third of her right humerus on the same spot with the radiographic finding. There was also a lower gnathic foci noted which was due to a dental inflammation.

The patient was driven to the theater where a combined method of intramedullary nailing and plating was performed. The plate was used in order to provide rotational stability (screws were placed through the plate and the nail simultaneously) since proximal locking of the nail was considered difficult to be achieved by free-hand technique without a risk for the neurovascular elements of the soft tissue. Debridement of the osteolytic foci was also performed and the void was filled with bone allograft (Fig.4-5). A rapid biopsy posed the diagnosis of multiple myeloma. The diagnosis was confirmed by the complementation of the pathologic-anatomic control. The humerus was immobilized in a sling for 10 days post-operatively and kinesiotherapy followed.

RESULTS : The 1 month post-operative radiographic control revealed signs of consolidation of the bone allograft in the humerus and no new osteolytic lesions (Fig. 6-7). At that point the patient had retrieved most of the shoulder's range of motion and full functionality of the elbow joint. At the 6 months control callus formation was recognized and the shoulder's functionality was fully rehabilitated.

RESULTS : An osteolytic lesion in the humerus shall raise the suspicion of a multiple myeloma although upper extremity localisation is not typical. The use of bone allograft for filling lytic lesions can be an alternative option to the irreversible common practice of bone cement use, especially in young patients with a high osteogenesis index.

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