

# Complex Fracture Of The Proximal Humerus Treated With Shoulder Prosthesis

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**Abstract:** Fractures of the upper end of the humerus that interrupt the blood supply to the humeral head may justify a prosthetic replacement. A rigorous analysis of the patient's condition and the type of fracture is a prerequisite before rejecting an indication of orthopedic treatment or fixation. The result of a hemiarthroplasty is mainly conditioned by compliance with technical rules whose purpose is to obtain anatomic and stable fixation of the tuberositis around the prosthesis to restore normal shoulder function. We report the case of a complex fracture-dislocation of the upper end of the humerus treated with a humeral prosthesis.

**Keywords:** Shoulder; fracture ; humerus ; hemiarthroplasty.

## INTRODUCTION

With an aging population, we observe an increase in the number of fractures of the upper end of the humerus, even in active patients. The majority of these fractures is displaced little or no access to orthopaedic treatment, with good functional results. For complex fractures (3 or 4 fragments) to large displacement, internal fixation is difficult given the often poor bone quality in the elderly and risk of osteonecrosis of the humeral head is not negligible, in such cases by the anatomical hemiarthroplasty prosthesis remains the standard method. We report a case of complex fracture dislocation of the upper end of the humerus treated with a humeral prosthesis.

## OBSERVATION

it is a patient of 91 years, right-handed, suffered a fall from standing height reception on the left upper limb causing pain and total functional impairment. On examination, the attitude of the trauma of the upper limb was typical with a deformed shoulder, arm in abduction and shortening. The pulses were present and no sensorimotor deficit. Plain radiographs showed a fracture-dislocation of the humeral head (Fig1, Fig2). A CT scan was performed and showed a dislocation of the humeral head fracture with complex 4 fragments (according Neer) (Fig3). The treatment was surgical; patient was installed in a semi-sitting position under general anaesthesia.



**Fig1, Fig2:** Standard radiograph showing a fracture-dislocation of the humeral head

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**Fig3:** CT scans of the shoulder showing a dislocation of the humeral head fracture with complex 4 fragments (according Neer).

First dectopectoral, arthrotomy of the rotator interval, detachment of the greater tuberosity in front of the lesser tuberosity back with four decimal six sutures to the greater tuberosity, establishment of a prosthesis size 12 with 20° retroversion and height of the prosthesis is calculated so that the upper edge of the greater tuberosity is 5mm below the prosthetic cap. Suture of the greater tuberosity on the lesser tuberosity after putting the graft in prosthetic inter intervals, tenodesis of the long biceps tendon and closure of the rotator interval. The patient was hospitalized with a capital output elbow to the body for six weeks with only pendulum mobilization and mobilization of the elbow and hand (Fig4, Fig5). At the back is 12 months, and after rehabilitation, Active forward flexion mobility was 97°, 90° abduction, external rotation 30° and the overall score of Constant was 39. Radiologically, was not observed anything unusual positioning of the tuberosities, ectopic ossification and healing of the tuberosities was found in good position.



**Fig4, Fig5:** Control with postoperative shoulder prosthesis in place.

## DISCUSSION

The treatment of complex fractures of the humerus in the elderly of the osteosynthesis plate screwed (1,2) or antegrade nailing (3,4) gives a good initial reduction. But he exhibited at the secondary dismantling a major osteoporotic bone or cephalic necrosis (5), resulting in functional disaster and surgical intervention in a fragile population (6,7). The standard treatment of these fractures in the elderly remains hemiarthroplasty. The anatomical hemiarthroplasty gives good functional results often took a prolonged immobilization, but also random according to the tuberosity reduction. There is a relatively large number of poor positioning of the tuberosities in hemiarthroplasty source poorer functional outcomes. The explanation is probably related to the advanced age of patients as shown Kralinger (8) or Wretenberg (9), but also in relation to a state of confusion and immediate postoperative agitation. The results of hemiarthroplasty seem variable concept also found in the comparative study of Sirveaux et al (10), where the results of hemiarthroplasty are spread evenly between 10° and 180°. Active rehabilitation was started on the 45th postoperative day, when the asset protection was withdrawn. This point seems to us fundamental trauma in the elderly, since the purpose is the restoration of the fastest possible autonomy, with a distance of the shortest living usual possible.

## CONCLUSION

The patient with a displaced fracture of three or four fragments of the proximal humerus probably not find the shoulder injury he had before, especially what age increases. The anatomical hemiarthroplasty gives good functional results often took a prolonged immobilization, but also random. The latter seems to three or four fragments of the upper end of the humerus bring improvement in the surgical treatment of complex fractures displaced.

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