



## INTRODUCTION

Distal humeral fractures are uncommon (only 1-2 % of all fractures), however in the elderly (>70 years old) are on the rise. Treatment for this population remains a challenge due to complexity, poor bone quality and osteoporosis, as well as severe comorbidities. Regarding operative treatment, a controversy remains in the literature: ORIF versus Total Elbow Arthroplasty (TEA). Aim of this study is to assess the functional and radiological outcomes, as well as the complications of patients over 70 years old treated with ORIF for distal humerus fractures and to assess whether ORIF achieves adequate results even in elderly patients.

## METHODS AND MATERIALS

31 patients (25 females, 6 males) were included in the study and data were collected in our institution from 2012 until 2020. Mean age of the population was 78 years (range 71-87 years). Fractures were classified according to AO and Gustillo- Anderson classification. Anatomic locking plates (90-90o or parallel 180o) were used ( Fig1-5). Patients were evaluated based on: Range of motion, complications, radiological evaluation and Mayo Elbow Performance Score (MEPS).



Figure 1. Radiographs of 75 yrs female ( type C distal humerus fracture).

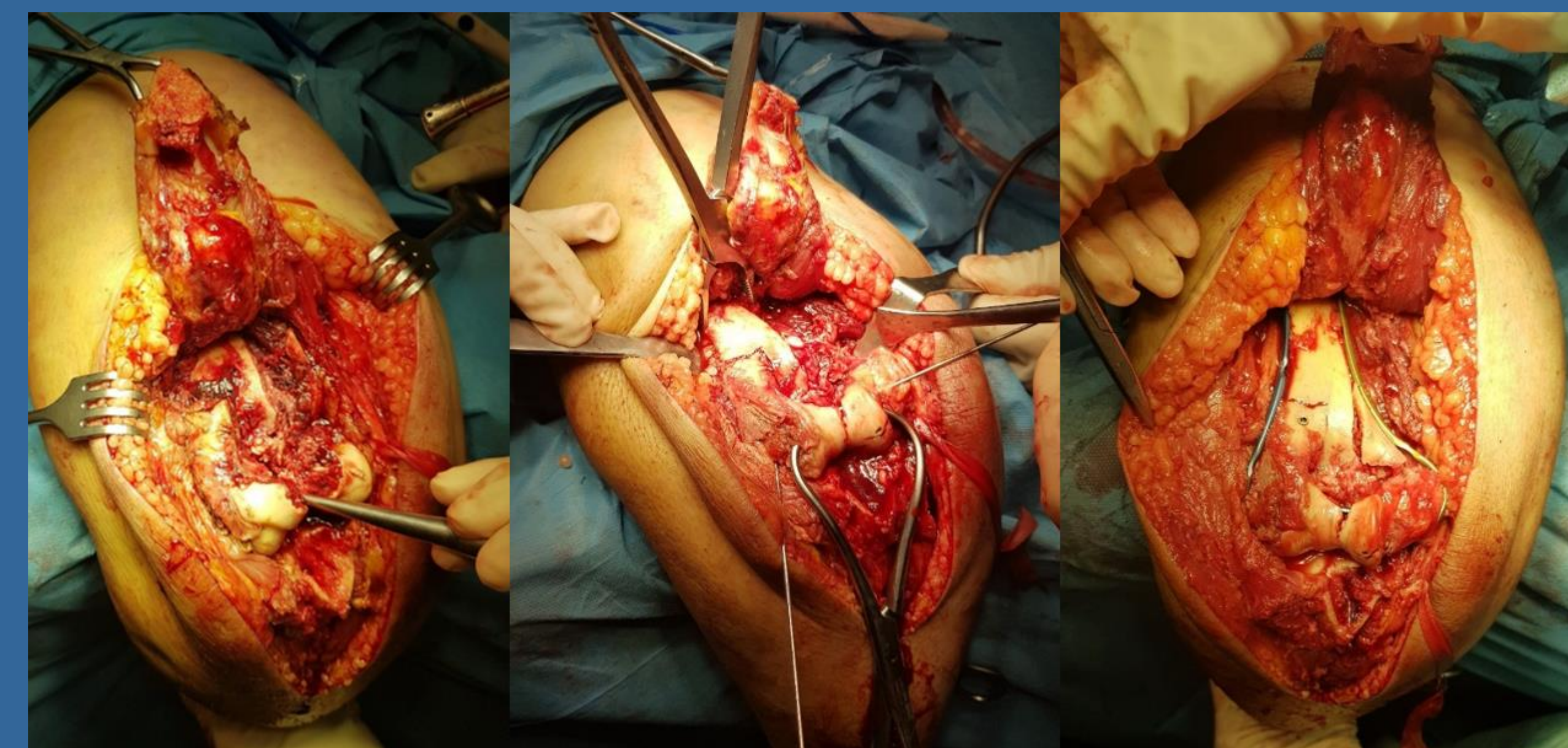


Figure 2. Stabilization of the intra-articular part with K-wires & parallel plates (180°).

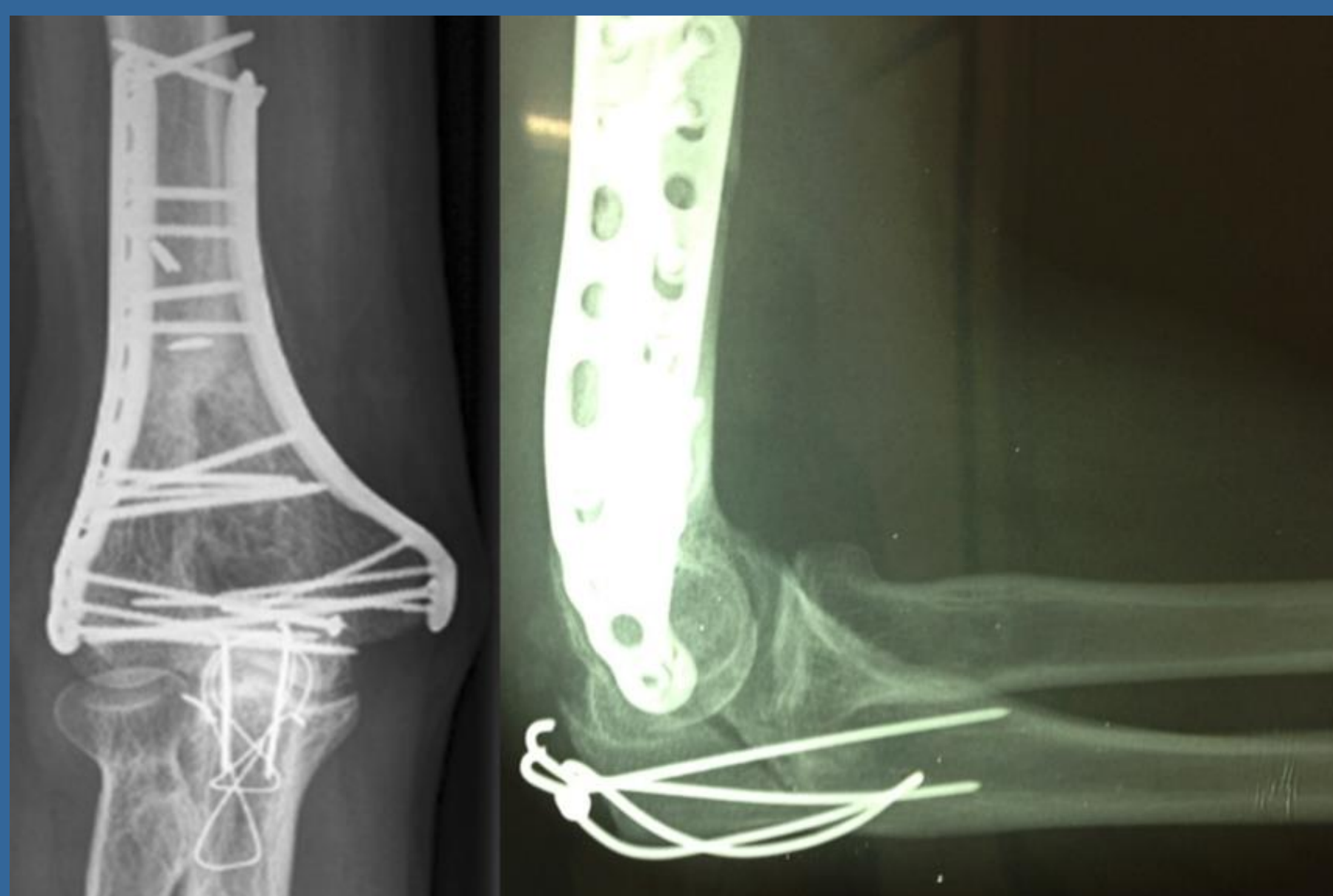


Figure 3. 3 mos Post-op radiographs .

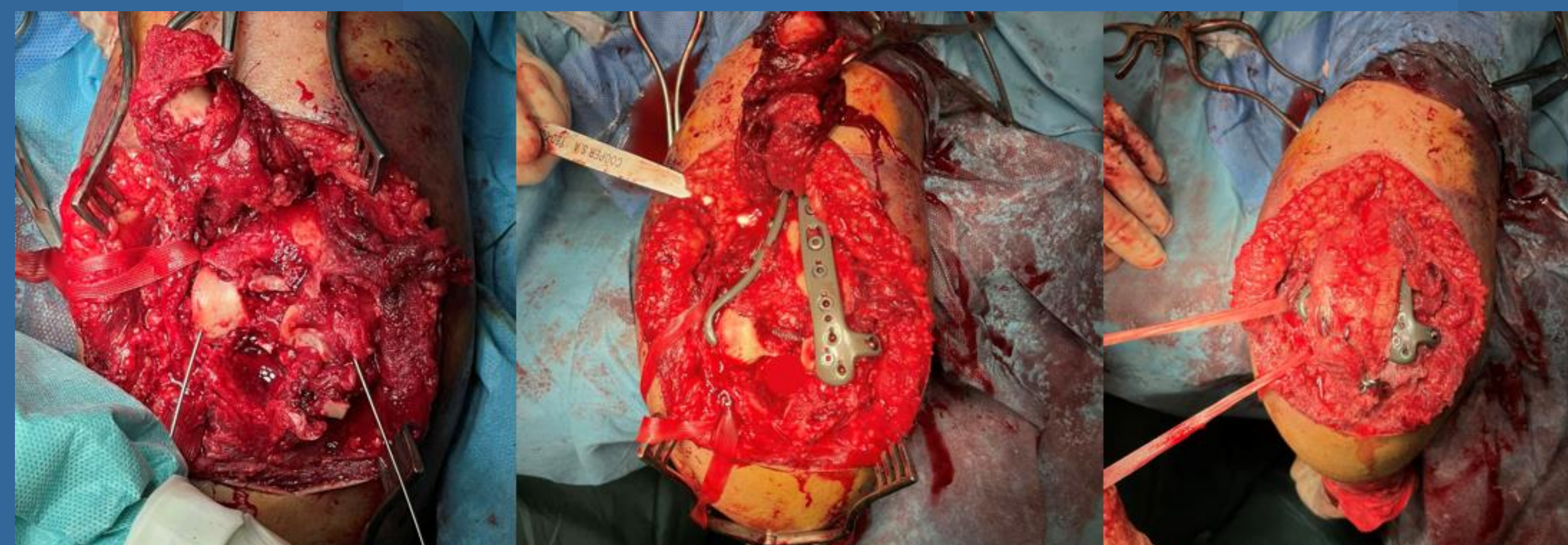


Figure 4. 74 yrs female-type C – 90-90° plates.

## RESULTS

Mean follow-up period was 3.4 years (range 1-7 years). Average ROM :

- average flexion 127 (range 100-150), (Fig 6),
  - average loss of extension 20.9 (range 5-40),
  - average pronation 68.3 (range 0-90),
  - average supination 75.3 (range 0 -90 ),
- Average MEPS 88.7 (range 60 -100).

7 patients had nonunion but only one patient (Fig .4) needed a revision surgery with ORIF and bone graft . 6 patients did not have significant effect on the clinical outcome and no patient had infection.

## CONCLUSIONS

ORIF of distal humerus fractures is a reliable treatment option even in the elderly (> 70 years) with good to excellent outcomes with low implication and revision rate. Advanced age should not be contraindication to ORIF of distal humerus fractures and we should evaluate the biological age of the patient and not the absolute numbers .



Figure 5. post-op radiographs

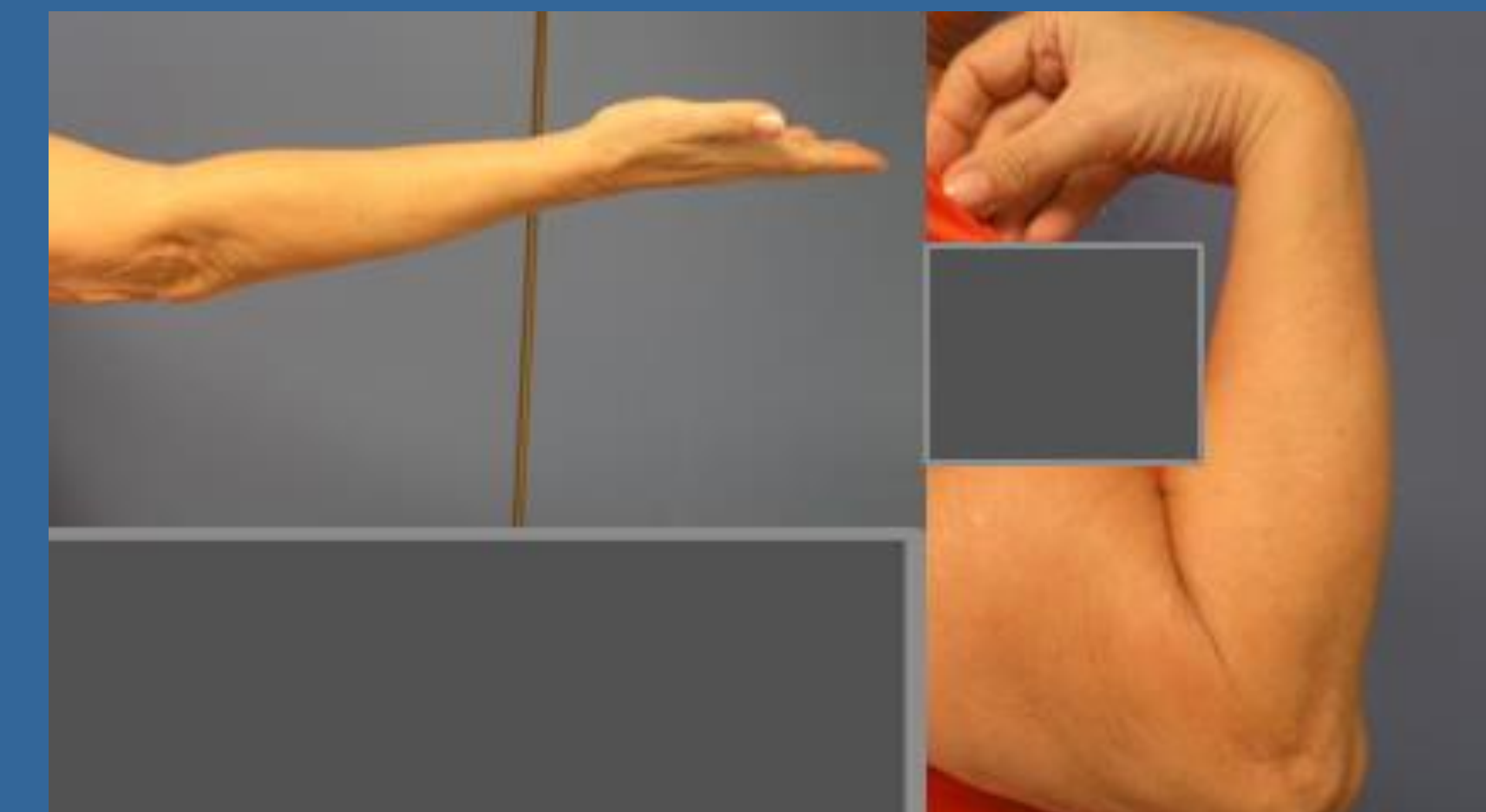


Figure 6. Final ROM.

## REFERENCES

- 1.Brian Joseph et al. Orthop Trauma. 2020
- 2.Alexander Lauder et al . Eur J Orthop Surg Traumatol 2020
- 3.Jong Seok Baik et al Clin Shoulder Elb. 2020