INTRODUCTION

The purpose of this study was to evaluate the functional and radiological outcomes of a cementless, trauma-specific reverse shoulder arthroplasty with locked stem for 3- and 4-part proximal humeral fractures.
MATERIALS AND METHODS

Forty five 3 & 4 part fractures in forty five patients of mean age 79 yo (68-94) have been treated by reversed prosthesis with locked stem.

The length of the stem was 15 cm with a proximal coating of HA automatic locking system (2 screws) and 4 different diameters.

Preliminary cadaver study allowed us to validate the system (22 shoulders, no injuries of nerves, locking system efficient).

The patients were operated at a mean of 7.1 days (1-17) after the fracture event by delto pectoral approach in 69% of cases. All patients have been reviewed by an surgeon not involved in the treatment.
RESULTS

All patients have been reviewed with a mean FU of 23 months (12-72). Active flexion reached 115,5° (35°-160°), active abduction 105,2° (35°-150°) and active external rotation 24° (-10°-80°).

Adjusted Constant score reached 81,4 (33-127) and QuickDash 36,2 (2-84). Gleno metaphyseal angle reached 36,8°(18-63) and inferior Offset reached 4,4 (0-6).

No complications related to stem locking were observed except 5 cases of screw removal without revision of implant. 3 complications occurred : 1 infection, 1 capsulitis and 1 axillary nerve palsy pre-operative. 6 cases of notch of grade 1 and 1 case of grade 3 was pointed.
CONCLUSION

In this population of elderly patient, new fall with periprosthetic fracture or infection led the surgeon to remove the stem. At shoulder level, the removal of a cemented stem remains a highly demanding procedure with sometimes bad functional results and elevated level of complications.

This serie is the first one of locked stem without significant complications. Locked stem remains a new but logical tool in trauma.