Prosthesis for proximal humerus fracture without cement:

First multicenter prospective continue study of a locked stem

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Introduction

Cemented stem remain the gold standard for prosthesis in trauma …

We report the first serie of locked stem of implant in trauma (hemi and reverse)
Material & Methods

N = 93 3 & 4 part fracture treated by locked stem

Hemiarthroplasty : N = 49 (mean age 67yo (50-90)
Reversed prosthesis : N = 44 (mean age : 76,8 (59-90)

Length of the stem : 15 cm with …

Proximal coating of HA

Automatic locking system (2 screws)
4 different diameters

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

Hemiarthroplasty: N = 49 mean FU of 26 months
Adjusted Constant score: 72.3 (31.5-120)
QDash 30.2 (4.5-68.1)

Reversed prosthesis: N = 44 mean FU of 16 months (12-34)
Adjusted Constant score: 79 (36.4-109.4)
QDash 36.5 (2.27-70.4)

Specific complications due to locking system: 3 %
but without reoperation

Other complications were: Capsultis (6%), infection (2%)
The stem is permanently fitted at the correct depth then the prosthesis is secured to the bone using a pin, by means of the ancillary, allows the first images

The operator can apply tuberosities and assess they anatomical reduction

Finally locking is completed

the technique of putting thread around the screw avoids loosing it in bulky soft tissues
Cases of hemi arthroplasty

Case 1

Post OP

FU 26 mo

Case 2

Post OP

FU 25 mo
Conclusion

In this population of elderly patient, new fall with periprosthetic fracture or infection push the surgeon to remove the stem.

At shoulder level removal a cemented stem remain a high demanding procedure with sometimes bad functional results and high level of complications.

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