**Vertical humeral angle (145°) in reverse prosthesis : Clinical and radiological complications at short follow up : Prospective multicenter continue study**

**L Obert, E Jardin, F Loisel, A Adam, J Uhring, E Beaudouin, T Authom, G Chaouat, H Delasselle, T Lascar**

The aim of the prospective multicenter evaluation was to correlate the functional results of a new reverse implant with a more vertical humeral angle (145°)
mat 121 patients of mean age 76 yo (59-91) have been operated (70 omarthrosis, 7 massive rotator cuff tear, 44 3 or 4 part fracture), by 8 surgeons (11 centers), by delto pectoral approach (71%), and evaluated with analysis of QuickDash score, Constant score and complications. 70% of implant were locked and 30% uncemented.
R. In trauma (N= 44, QDash (25.6) and Constant scores (CB=59-CP=85,2%) were different than in elective surgery (arthritis) (N=77, Constant scores (CB=67-CP=96%). Clinical complications reached only 12,5%. Gleno metaphyseal angle reached 38° (15-58). Inferior rim of glenoid reached 4mm (2-8). No dislocation and 4 notches (all grade 1 and all in trauma cases) have been noted.
In the 32 reported series of reversed prothesis for arthritis the percentage of radiological complications reach 50% (80% of notch) but with a more horizontal angle (155°). In the 10 reported series of reversed prothesis for fracture FU is short. With this serie and with this FU, we demonstrated like Franckle, that a more vertical humeral angle in reverse prosthesis allow to diminish the notch without more instabilty.

**Inverse prosthesis with a more vertical humeral angle: impact on the rate of luxation and notches: prospective multi-centre evaluation**
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**Vertical humeral angle in reverse prosthesis: what are the consequences for dislocation and notch with a new implant**
**Prospective multi-centre continued study**

**Introduction**: The objective of the prospective multi-centre study was to correlate the functional and radiological results of a new inverse implant with a more vertical humeral angle: 145°
**Materials and methods**: Insertion of this inverse prosthesis (Humelock, FX-Solutions®) was carried out on 121 patients with an average age of 76 yrs (59-91) presenting with 70 omarthrosis with massive rotator cuff tear, 7 massive rotator cuff tears and 44 three or four part fractures by 8 surgeons (11 centres). A delto pectoral route was used in 71% of cases. 70% of the implants were locked and 30% uncemented. The evaluation was clinical (Constant score, QDash) and radiographical ( X-ray and Cat scan if necessary).
**Results:** At a 13 month follow-up (6-34) the functional results for trauma (N= 44, QDash : 25.6, base Constant score 59, weighted Constant score 85.2%) are a little

lower than those from monitored surgery (N=77, base Constant score: 67, a weighted Constant base score: 96%). In the X-ray study, the metaphyseal Glenoid angle reached 38° (15-58) and the lower glenoid rim reached 4 mm. (2-8). The complication rate was 12.5%, but no luxations were observed in this group at this follow-up. 4 grade 1 notches were observed, all in the patients presenting with fracture cases.

**Discussion:** A « more vertical » humeral part allows for a reduction in the gleno-metaphysial angle and the rate of notching (Fvard). But to vary this angle when implanting a 155° prosthesis, the surgeon can only assess from the angle of inclination of the glenosphere. In the 32 published series of inverse prosthesis for omarthrosis or rotator cuff tear, the percentage of radiological complications is as high as 50% with 80% notching. In the 10 series of inverse prosthesis following a fracture, the follow-up is shorter, but with earlier notching. In all of these series, the implants used have a more horizontal humeral angle (155°). With this study and follow-up, the use of an implant with a more vertical humeral angle (145°) seems to allow us to reduce the notching rate without increasing the risk of instability as shown by Franckle.