

# **Proximal humerus fracture treated by hemiarthroplasty with uncemented locking stem: multicenter prospective evaluation with a minimum FU of 2 years**

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Cemented stem remain the gold standard for prosthesis in trauma

We report the first serie of an uncemented stem fixed by locking screw to evaluate clinical and radiological results of a new implant (Humelock, FX-Solutions®)

A study on 22 cadaveric shoulders & a prospective multicentric clinical evaluation on 21 cases have been conducted to evaluate the use of new tools : placement of a locked stem at right height (pectoralis major), massive horse shoe graft in a metaphyseal frame & strong looped osteosuture of tuberosities.

Evaluation by QDash and Constant score were correlated with positioning of the tuberosities using radiographic examinations & CT scan.

21 patients (18 cases of 4 part) mean age 67,8yo (50-90) have been operated by 5 senior surgeons in 4 centers and reviewed with a mean follow up of 51 months (24-96). At highest follow up Abduction reached 95° (60-160), flexion : 108° (70-160), ER1: 34(0-55). QD reached: 33 (4,5- 59), Constant score: 53 (27-75) and with ponderation: 75 (31,5-109). In 2 cases with post operative non reduction of tuberosities shoulder was stiff (abduction and Flexion < 70°) with great tuberosity non union. Complications have been described in 6 cases : Capsultis ( 2 cases), cuff problem (2 cases), per operative fracture (1case) problem with locking without reoperation (1 case). The series from Sofcot, Boileau, and Reuther yielded results of 40 to 66% malposition or non union of the tuberosities. Our results are encouraging and demonstrate that using a locking stem and a variable volume metaphyseal frame with massive autograft to fix tuberosities with control of the height of the implant is reliable.