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.