

12th International Conference on

ARTHROPLASTY

June 24-25, 2019 | Rome, Italy

Straight proximal humeral nail through the medial "hinge entry point" for treatment of displaced proximal humerus fractures

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Statement of the Problem: Surgical management of proximal humerus fractures (PHF) remains a challenging scenario for even the most experienced surgeons. Recently, the Intramedullary Nail (IMN) has become more widely used as it presents both biological (percutaneous approach) and mechanical advantages compared to other methods of fracture fixation. The purpose of this study was to analyse the clinical and Imagenological outcomes of a straight third generation IMN for PHF through the medialized entry point (respecting the Supraspinatus tendon insertion) at minimum 6 months follow-up.

Methodology & Theoretical Orientation: We retrospectively analysed a series of 37 patients from two Hospitals operated between November 2016 and March 2018. The surgery was performed under the same technical principles. The clinical scores (VAS, SSV, ROM and Constant Score), radiographic (rate of consolidation, coronal orientation and osteonecrosis of the humeral head, screw penetration and migration of the greater tuberosity) and echographic parameters (proximal nail prominence, medio-lateral entry point and status of the SSP tendon) were also analysed. Findings: 35 patients were available for study, a mean follow-up of 11 months [6-32]. The average age was 64,5 + 13 years and the 84,3% were males. The Neer classification was 62.5% 2-part fractures and 37.5% 3-part fractures. The clinical results were satisfactory (VAS: 1,6 pts; SSV: 75%, CS 67 pts and adjusted CS 90%). We found 21,8% of minor complications (7 cases), but only one required surgery (arthroscopic biceps Tenodesis). We did not have any case with a Major complication (non-union, osteonecrosis of the humeral head, intra articular screw penetration or greater tuberosity migration). Only1 patient presented a total SSP tear (90 years old) and 3 articular partial tear, all of them with good clinical results. No reoperation was required secondary to rotator cuff tear pathology.

Conclusion & Significance: In this series of patients from 2 hospitals, the IMN for displaced PHF showed good clinical, radiological and echographic results, with no major complications in reoperation, and preserving the integrity of the SSP tendon.



Figure 1: Proximal humerus fractures treated with Intramedullary Nail; pre and post operative x-rays and clinical a) 2-part PHF and b) 3-part PHF

Biography

Gabriel Cárdenas has expertise in the evaluation and management of shoulder pathology. He has served as the head of shoulder arthroscopy, trauma and reconstruction unit of the Chilean Institute of work safety (Instituto de Seguridad del Trabajo, IST). He currently is completing a year-long fellowship at the University Institute of Locomotion and Sport, Pasteur 2 Hospital in Nice, France, under the guidance of Professor Pascal Boileau.

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