

Innovative Treatment for Rescue of Femoral Neck Fractures: Comparison of Two Systems***Ricardo Madrigal, MD; Jose A. Carreon***

Purpose: The aim of this study was to compare the results of transcervical fractures treated with a dynamic system: femoral neck system (FNS), and a static system: proximal mini femoral plate (MPFP) in the preservation of the femoral head.

Methods: A prospective, randomized, comparative study was carried out in patients with intracapsular fracture (31B1, 31B2, and 31B3 OTA/AO) who underwent surgery from May 2021 through February 2024. Two groups were randomly formed for treatment: group A was treated with the FNS system and group B with the MPFP system. Clinical information (age, gender, history, type of injury mechanism, type of fracture, surgical time, surgical bleeding, initiation of partial or complete load, infections, and successful outcome or complications) was recorded in an Excel database; variables were compared between groups by means of a descriptive and inferential analysis in the SPSS statistical program. A value of $p < 0.05$ was considered significant.

Results: Of 32 patients (19 women), 14 were treated with MPFP, and 18 with FNS. The average postfracture surgery time in the FNS group was 3 days; in the MPFP group, it was 3.5 days. Radiographs were taken to assess evolution on different occasions. There was no infection in either group. The mean time of support onset was 4 weeks in both groups. In MPFP, results were good in 65% of patients, and in FNS, results were good in 78% of patients. Patients' mean age was 71 years in the FNS group and 56 years in the MPFP group. In the FNS group, four patients had bad results (three patients with diabetes mellitus [DM] and one with depression and hypothyroidism). In the MPFP group, five patients had bad results (two with DM, two with depression, and one with obesity and who was a Jehovah's Witness).

Conclusion: Significant differences were found between the groups with better results in the FNS group. Both systems used a minimally invasive technique with minimal physiologic stress for the patient. Average bleeding was 50mL, and average surgery time was 30 minutes. A common factor in implant failure was uncontrolled concomitant diseases and depression. Both systems demonstrated adequate results regardless of the time elapsed from surgery and the patient's age. The FNS system presented similar results to those found in the literature, and the MPFP system presented better results than those found in the literature.