

Clinical and Medical Case Reports

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Peri-implant femoral fractures: The risk is more than three times higher within the proximal femoral nail compared with dynamic hip screw

Introduction: Information is lacking regarding incidence rates, treatment regimens, and outcomes concerning peri-implant femoral fractures (PIF). Therefore, we performed a retrospective study to provide scientific data concerning the incidence and outcome of PIF following osteosynthesis of proximal femoral fractures (PFF).

Material & Methods: We retrospectively included all patients who received osteosynthesis for PFF between 2006 and 2015 and in whom PIF was confirmed postoperatively. All available patients with PIF were contacted minimum one-year post-surgery.

Results: A total of 1.314 osteosynthesis procedures were performed, of which 705 were proximal femoral nails (PFNs), 597 were dynamic hip screws (DHSs), and 12 screwed appliances only. During the same period, 18 PIFs (1.4%) were reported. However, PIF was 3.7 times higher within PFN when compared to DHS (15/705:2.1% versus 3/597:0.5%; odds ratio: 3.7). The following analysis also included 8 patients with PIF who were referred from other hospitals, resulting in a total of 26 patients. Mean patient age was 84.8 years (range, 57–95), with a predominance in female (23x) and in the left femur (19x). PIF occurred after an average of 23.6 months (range, 1–81) post-surgery. The fractures, most of which were spiral-shaped, were most commonly treated with locking plate osteosynthesis. The surgical revision rate was 7.7%, and the one-year mortality was 23.1%. At an average of 43.0 months (range, 12–100) post-surgery, it was possible to contact 18/26 patients (69.2%), and their mean Parker Mobility Score was 5.2 points (range 2–9).

Conclusions: Peri-implant femoral fracture is a rare incident within the old age traumatology of PFF. However, based on our small number of cases, it occurred within PFN much more frequently compared with DHS. Locking plate osteosynthesis has been shown to be effective and reliable. Surgical revision and mortality rates do not appear to be increased when compared to those with the initial treatment of proximal femoral fractures.

Biography

Franz Muller is Consultant and Senior Surgeon in the largest catholic hospital in Germany. He is specialist in all kinds of orthopedic trauma incl. spine and pelvic, as well as endoprosthesis incl. revision surgery. He is first and senior author of more than 20 original papers, especially in spine surgery and trauma. In his vacations he is also working for Medecins Sans Frontieres.

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