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Are geriatric patients good candidates for short stem total hip arthroplasty? A multicenter prospective study.

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Introduction :

The increasing use of minimal invasive surgery (MIS) and muscle sparing approaches as well as the need for bone stock preservation have led to the development of metaphyseal engaging short stems for cementless total hip arthroplasty (THA). Since this kind of surgery aims a constantly increasing target group of geriatric patients, an important question arises: is advanced age (>75 years old) a contraindication for the use of short stems in total hip arthroplasty?

Methods :

Data was prospectively collected in five centers in Switzerland and Germany up to 24 months after surgery. Clinical and radiological postoperative data were assessed for both age groups in intervals of 6-12 weeks, 6,12 and 24 months.

Results:

A total of 261 patients were included in the younger group (<60 yo) and 142 patients were included in the elderly group (>75 yo). Primary osteoarthritis was the most frequent diagnosis in both groups, followed by developmental dysplasia of the hip (DDH) in the younger and secondary osteoarthritis in the elderly. The direct anterior and anterolateral approaches were the most frequently used in both groups.

The outcome was evaluated both clinically and radiologically. The Visual Analog Scale (VAS) was used to assess rest and load pain as well as patient overall satisfaction before and after surgery for the two groups. VAS load pain VAS rest pain, VAS satisfaction and the Harris Hip Score (HHS) were strikingly improved for both younger and older groups at 24 months of follow-up (FU).

Radiological evaluation of the stem on plain x-rays at 24 months of FU showed (younger vs older group): Resorption of the calcar was present in 7.4 vs 8.7% of the patients. Radiolucent lines in the stem-bone interface were present in 2 cases in the younger group with no cases in the elderly. Stem subsidence in the early postoperative period (6-12 weeks) was 11.9% in the younger vs 9.6% in the elderly with a mean of 2.0 mm (range 1.0 to 7.0) and 2.7 mm (range 1.0 to 15.0) respectively. Stem migration observed at 6 and 12 months of FU were 2.7 vs 3.7% and 1.5 vs 1.1%. No further stem migration was observed at 24 months of FU.

Conclusion:

According to our encouraging results, cementless metaphyseal engaging short stems seem to be a safe choice for total hip arthroplasty in the elderly. Nevertheless, a longer follow up and larger prospective studies are necessary in order to further support this hypothesis.