Metaphyseal short stem in total hip arthroplasty

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BACKGROUND

Short metaphyseal stems conserve a larger amount of bone and due to their biomechanical effect, they allow higher compression forces on the lateral column of the femur and reduce stress shielding (6). Since they conserve metaphyseal bone, short stems allow the use of conventional stems when revision surgery becomes necessary (7,8,9). We present our initial experience using DePuy Proxima stems in THA, our evaluation of the first 43 consecutive cases, and discuss some aspects of the surgical techniques and the preliminary clinical results.

METHODS

Between June 2008 and December 2010, 43 patients received primary THA with DePuy Proxima prostheses. The Proxima stem is made of forged titanium alloy with a porous surface coating of HA-Duofix™ made of hydroxyapatite. Nine stem sizes were used, as well as standard offset at 133° and lateralized offset at 127° for each size. In all cases, the DePuy Pinnacle cup was used (Fig.1).

The indications for implanting these stems were that patients should be young and suffering from osteoarthritis of the hip and avascular necrosis but with a good quality femur. Contraindications were a body weight of over 120kg, severe dysplasia of the hip, a history of femoral intertrochanteric osteotomy or any other femoral distortion, a cortical index of less than 3 and severe osteoporosis.

Patients were evaluated clinically using the Merle d’Aubigné (MD) score. Radiological assessment was carried out by means of a standard AP x-ray of the pelvis and lateral hip.
RESULTS

Pre-operative clinical evaluation was 10 points according to the MD score (range 8-14), at six months the mean value was 16 points (range 11-18) and at end of follow-up, the mean value was 17.4 (range 12-18). There were no intra-operative or postoperative complications. No infections, dislocations, venous thromboses or nerve lesions were observed (Fig.2).

End-of-follow-up radiographic evaluation showed a lack of osteolysis and radiolucencies. The mean acetabular inclination was 47° (range 42-50).

However, there was slight varus of the femoral stem in 5 cases and one case of severe varus. This latter case presented continuous pain in the lateral aspects of the thigh which increased in time together with a diaphyseal reaction and an increase in the stem varus which required revision surgery at 12 months post-op to replace the femoral stem with a conventional cementless Accolade (Stryker) stem (Fig.3).

CONCLUSION

The implementation of short metaphyseal stems De Puy next type is not difficult but is different from colocacióon of uncemented stems. For this reason, it is advisable to select the patients properly.

Clinical results in the published series are good and found a good and fast metaphyseal osseointegration, but we need more follow-up time to assess the evolution of X-ray observations and to confirm the durability of the observed clinical outcomes.

REFERENCES

