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Preliminary report

Good long term stability with low monomer bone cement in total hip arthroplasty. A randomized RSA study

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Introduction

Low temperature curing cement with less toxic monomers might obtain a better long term fixation to bone. We have followed the performance of such a cement and can now report clinical and fixation results after 10 years.

Method

44 patients (47 hips) with osteoarthritis of the hip were randomised to fixation with either a low monomer, (Cemex® Rx & Cemex® System) with Ba opacifier or normal cement, (Palacos® R) containing Zirconium contrast. We used Lubinus® SP2 femoral stems of Titanium alloy, third generation cementing and an all-poly cup. Palacos cement was vacuum mixed while Cemex was not, all according to manufacturers recommendations. Thirty-four patients were evaluated with RSA, conventional radiography and hip score at 10 years while 13 were diseased or refused follow-up due to poor health.

Results

The stems fixed with Cemex subsided a mean (CI) of 0.46 mm (0.1-0.8) and retroverted 0.82 degrees (0.2-1.4). Stems fixed with Palacos subsided 0.28 mm (0.1-0.5) but rotated more inside the cement, 1.48 degrees (0.6-2.3). The cups were uniformly stable and wear low (0.04 mm / year) regardless the cement used. Radiolucent lines were few and non-progressive and there was no difference in HHS score.

Discussion/Conclusion

These results confirm our good mid-term results with Cemex® cement (1). We found no benefit of less toxicity and heat, but the ease of use of Cemex System which worked as well as Palacos over 10 years. Vacuum mixing of this low monomer cement might improve its performance further. Barium or Zirconium as contrast did not influence wear as reported before.

(1) Nivbrant B, Kärrholm J, Röhrl SM, Hassander H, Wesslen B: Bone cement with reduced proportion of monomer in total hip arthroplasty: preclinical evaluation and randomized study of 47 cases with 5 years' follow-up. Acta Orthop Scand. 2001 Dec;72(6):572-84