Original Article

FOUR-YEAR AVERAGE FOLLOW UP OF CEMENTED PCA TOTAL KNEES: CLINICAL AND ROENTGENOGRAPHIC ANALYSIS

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ABSTRACT

Twenty patients with 25 consecutive primary-cemented Howmedica PCA total knee prostheses were clinically and roentgenographically reviewed. Twenty implants were placed in 16 women and five in four men. The average patient age at surgery was 68.0 years (range, 53 to 82), and average follow up was 51 months. Total knee replacement indication was degenerative joint disease in 21 knees and rheumatoid arthritis in four. Excellent or good results were seen in 22 of 25 knees (88%) at the early follow up examination and 18 of 25 knees (72%) at the most recent follow up examination.

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Much controversy has surrounded the role of polymethylmethacrylate (PMMA) cement fixation in total knee arthroplasty. While porous-coated devices intended for bone ingrowth offer the potential advantage of long-term biological fixation, the bone-implant interface is less forgiving to technical or design error.[1,2] Cement fixation advocates argue that this surgery is technically less demanding and offers immediate stable fixation. Noncemented knee arthroplasty proponents cite the following cement fixation disadvantages[3]: 1) less available bone stock in the event of revision; 2) the potential for methacrylate debris which can contribute to three body wear and/or bone resorption; 3) the potential for two interface failures (bone-cement and cement-prosthesis); 4) longer operative time; and 5) poorer prognosis in case of infection.

The Howmedica PCA total knee system (Howmedica Inc, Rutherford, NJ) was introduced in 1980 with design goals of alignment and positioning perfection of each component.[2,4-6] Many authors have reported their experiences with the PCA total knee system, with and without cement.[2,3,7-12]

Hungerford et al reported the initial short-term results of 132 PCA total knee arthroplasties in 110 patients, with a 6 to 31 month follow up period.[3] Clinical evaluation of the 78 cemented and 54 noncemented arthroplasties showed excellent or good results in 85.9% and 90.7% of cases, respectively. Hungerford et al also re-