Cementless versus cemented tibial fixation in posterior stabilised total knee replacement - a randomised trial

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INTRODUKTION

Evidence increasingly supports cementless tibial fixation in Total Knee Replacement (TKR) but a paucity of literature exists for posterior stabilised designs, which experience significant stress from cam-post interaction.

PATIENTER OCH METODER

This is a prospective trial involving 97 TKRs randomised to cemented or cementless tibial fixation. Two experienced arthroplasty surgeons implanted fixed-bearing ACS PS prostheses with other variables standardized. RSA, DEXA and PROMs were performed pre/postoperatively and at 3, 12 and 24 months.

RESULTAT

Between 0-3 months mean subsidence of the cementless group was 0.84mm (N=33), 0.20mm between 3-12 months (N=29) and 0.18mm between 12-24 months (N=26).
In contrast the cemented group shows significantly less (p=<0.001, 0.006, 0.016) mean subsidence for all intervals at 0.01, 0.03, 0.02mm respectively (N=33, 37, 32). Migrations on other axes are not significant.
Tibial BMD decreased significantly more in the cemented group between 0-24 months.
PROMs are improving equally between groups and one tibial component has been revised (cementless) after trauma.

DISKUSSION

The late subsidence/migration displayed in the cementless group after 12 months is associated with increased risk of revision, raising concerns for fixation stability, while cemented implants display a high degree of stability throughout. Bone density is however reduced significantly around cemented components consistent with stress shielding, with good conservation in the cementless group. The differences are not reflected in clinical scores at this stage.

KONKLUSION

Caution must be advised for this cementless PS tibial component as the late migration seen increases risk of future implant failure and revision.