

Cementless Fixation in Oxford Unicompartmental Knee Replacement. A Multicentre Study of 1000 Knees

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Core:

The authors set out to review 881 Oxford® Cementless PKR patients from three different institutions with a mean follow up of 38.2 months. Radiographs and clinical scores were collected.

1. At 6 years, implant survival was 97.2%
2. 8.9% of the knees had a partial radiolucent line under the tibial component
3. A total of 19 knees (1.9%) had significant implant related complications or required revision
4. 3 of the 19 complications were tibial plateau fractures

Conclusion:

The authors set out to review 881 Oxford Cementless PKR patients from three different institutions with a mean follow up of 38.2 months. Oxford Cementless Partial Knee Replacement appears to be safe and reproducible in patients with end-stage anteromedial osteoarthritis of the knee, which radiological evidence of improved fixation compared with previous reports using cemented fixation.

Cemented versus Cementless Oxford Unicompartmental Knee Arthroplasty Using Radiosterometric Analysis: A Randomised Controlled Trial

B.J. Kendrick, B.L. Kaptein, E.R. Valstar, H.S. Gill, W.F. Jackson, C.A. Dodd, A.J. Price, D.W. Murray
Bone Joint J. 2015 Feb;97-B(2):185-91

Core:

Kendrick, et al reviewed the 2 year RSA results of 21 cemented and 22 cementless Oxford Partial Knee replacements. The authors found:

1. No femoral radiolucency was seen in either group
2. Both cemented and cementless femoral components subsided in the first year
3. Cementless tibial components subsided more than cemented in the first 3 months, however after 3 months the cementless tibial components became stable, whereas the cemented tibial components continued to subside
4. Tibial radiolucencies were narrow (< 1 mm) and were significantly ($p = 0.02$) less common with cementless (6 of 21) than cemented (13 of 21) components at two years.

Conclusion:

“As second-year migration is predictive of subsequent loosening, and as radiolucency is suggestive of reduced implant-bone contact, these data suggest that fixation of the cementless components is at least as good as, if not better than, that of cemented devices”

Improved Fixation in Cementless Unicompartmental Knee Replacement

H.Pandit, A.D. Liddle, B.J. Kendrick, C. Jenkins, A.J. Price, H.S. Gill, C.A. Dodd, D.W. Murray
J Bone Joint Surg Am. 2013Aug;95(15):1365-72

Core:

Pandit, et al reviewed the 5 year follow up of 33 Cemented and 30 Cementless Oxford Partial Knee replacements. There was no increase in complications with cementless compared to cemented, nor was there any evidence of femoral or tibial loosening found in either group. Survivorship was 100% in both groups. Additionally:

1. Radiolucent lines were observed in 64% of the cemented cases and only 7% in cementless cases
2. At five years, the mean Knee Society functional score demonstrated a significantly superior outcome in the cementless group compared to the cemented group
3. Cementless demonstrated a mean operative OR time savings of 9 minutes over cemented

Conclusion:

“Cementless fixation provides improved fixation at five years compared with cemented fixation in mobile-bearing UKR, maintaining equivalent or superior clinical outcomes with a shorter operative time and no increase in complications”

The five-year radiological results of the uncemented Oxford medial compartment knee arthroplasty

N. Hooper, D. Snell, G. Hooper, R. Maxwell, C. Frampton

Bone Joint J. 2015;97-B:1358-63

Core:

Hooper, et al followed the first 150 consecutive Cementless Oxford PKR patients, and reported a 5-year survivorship of 98.7%. The following key points in the article should be noted:

1. With age and gender taken into account, significant improvements were observed in mean OKS (Oxford knee score) and HAAS (High Activity Arthroplasty Score) at the two year follow up and were maintained at 5 years.
2. There was no radiographic evidence of subsidence nor femoral lucency in any of the knees at 5 years.
3. None of the knees demonstrated a complete tibial radiolucent line (RLL), and there were no pathological RLLs. 7.3% of knees did demonstrate partial RLLs, which is significantly lower than observed in cemented Oxford PKR^{1,2}, and similar to results in other cementless OUKR studies.³

Conclusion:

“In conclusion, we have shown maintenance of excellent functional results from early results at five years with the cementless OUKA, with a very low incidence of RLLs and overall component survivorship of 98.7% at five years.”

References

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3. Little, A. D., et al. “Cementless fixation in Oxford unicompartmental knee replacement A multicentre study of 1000 knees.” *Bone & Joint Journal* 95.2 (2013): 181-187.

