

Patellar Resurfacing Is Associated With Better Knee Specific Functional Outcomes After Posterior Stabilised And Lower Rates Of Anterior Knee Pain After Cruciate Retaining Total Knee Arthroplasty: A Systematic Review And Meta-Analysis

Orthopaedics / Knee & Lower Leg / Joint Replacement - Primary

Cameron Simpson¹, Evan Wright¹, Jin Yap Ngee², Nathan Ng², Solomon Ndou², Chloe Scott², Nick Clement²

1. Department of Trauma Orthopaedics, West of Scotland, Glasgow, United Kingdom
2. Edinburgh Orthopaedics, South-East Scotland, Edinburgh, United Kingdom

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Background

During total knee arthroplasty (TKA) the articular surface of the patella can be resurfaced, but despite an extensive research on this topic, patella resurfacing remains controversial. The decision to resurface or retain is often left to the surgeon's discretion with multiple factors contributing to this decision. The effect of implant design and the benefits of patella resurfacing following TKA are not clear. Previous studies have demonstrated a significantly greater risk of revision when the patella was not resurfaced as part of TKA, but this was significantly greater when using a posterior stabilised (PS) prosthesis compared to a cruciate retaining (CR) implant.

Objectives

This systematic review and meta-analysis aimed to compare the influence of patellar resurfacing following cruciate retaining (CR) and posterior stabilised (PS) total knee arthroplasty (TKA) on: incidence of anterior knee pain (AKP), knee specific patient reported outcome measures, complication rates and reoperation rates.

Study Design & Methods

A systematic review of MEDline, PubMed and Google Scholar was performed to identify randomised controlled studies according to a search criteria. Studies were evaluated using the SIGN assessment tool. Data was synthesised and meta-analysis performed.

Results

There were 4135 (2068 resurfaced and 2027 unresurfaced) TKAs in 35 separate cohorts from 33 peer reviewed journals identified. Anterior knee pain (AKP) rates were significantly higher in unresurfaced knees overall (odds ratio (OR) 1.84, $p=0.006$) but more specifically associated with CR implants (OR 1.95, $p=0.03$). There was a significantly higher (better) Knee Society function score ($p<0.00001$, mean difference (MD) 1.98) and Oxford score ($p=0.04$, MD 2.24) for PS implants when patella resurfacing was performed, but these differences did not exceed the minimal clinical important difference for these scores. There were no significant differences in complication rates or infection rates according to implant design. There was an overall significantly higher reoperation rate for unresurfaced TKA (OR 1.46, CI 1.04-2.06, $p=0.03$) but there was no difference between PS or CR TKA.

Conclusions

Patella resurfacing when performed with CR implant resulted in lower rates of AKP and when used

with a PS implant yielded better knee specific functional outcomes. Patella resurfacing was associated with a lower risk of reoperation overall, but implant type did not influence this.