

Anatomical Patella Button Design Improves Outcome of Total Knee Arthroplasty.

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Background

Patella resurfacing is commonly performed during total knee arthroplasty (TKA), and the patella button design can vary within a TKA implant. Implant design is known to affect patellar kinematics, contact mechanics, and ultimately the outcome of TKA. The aim of this study was to compare the patient reported outcomes of TKA with either an anatomic (AP) or medialized dome (MD) patellar component.

Methods

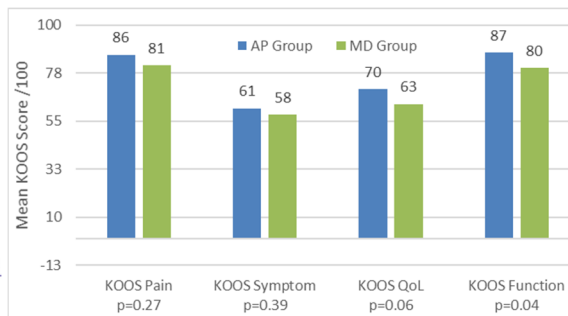
The study is a prospective cohort study of 100 TKA performed between December 2015 and August 2017. We compared a consecutive series of 50 TKA subjects with an AP, with the previous 50 TKA subjects with a MD patellar. The primary outcome measure was difference in Knee Injury and Osteoarthritis Score (KOOS) at 12 months postoperatively. Other patient reported outcome measures include EQ5D as a general health measure, and patient satisfaction.



Figure 1: Anatomical Patellar Button (left) and Medialised Dome Patellar Button (right)

Results

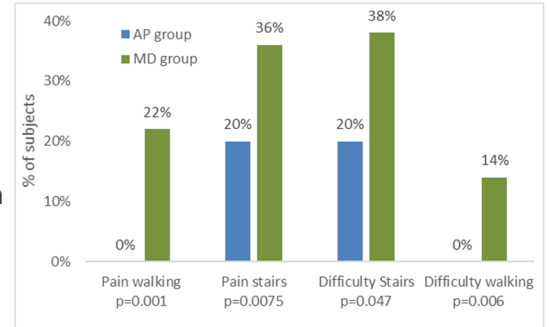
There was no significant difference in baseline characteristics, KOOS, or EQ5D between the two groups.



At 12 months after TKA the AP group had a higher mean KOOS function score (87 ver-

sus 80, $p=0.04$), compared to the MD group.

The AP group also reported greater patient satisfaction (98% versus 82% satisfied, $p=0.009$) compared to the MD group. Subjects who received the anatomical patellar button had a 9 times lower relative risk of dissatisfaction with surgery, compared to medialised dome subjects.



The AP group had significantly lower frequency of pain with level walking, less difficulty with stairs, and lower mean EQ5D mobility (1.3 v 1.7, $p=0.002$) at 12 months compared to the MD group.

Conclusions

This study has demonstrated that using an anatomical patella button has significantly superior patient reported outcome measures following TKA, compared with a medialised dome button. The AP Group had a higher mean KOOS Function Score, lower frequency of significant pain and difficulty with level walking and stairs, better mean EQ5D mobility, and superior rates of patient satisfaction at 12 months postoperatively. Use of an anatomical design patellar button, compared to a medialised dome button following TKA improved 12 months outcomes, especially patient satisfaction and a reduction in PFJ adverse symptoms.



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