

+ Evidence in focus

Publication summary: Bollars P, et al. *Eur J Orthop Surg Traumatol* (2020)*

Smith+Nephew

Use of NAVIO[◇] Surgical System is associated with accurate implementation of the surgical plan and reduced outliers, compared with conventional total knee arthroplasty (TKA)

+ Plus points



Significant increase in mean MA (p=0.028) with NAVIO TKA (180°) compared to conventional TKA (179.1°)



Lower rate of MA outliers with NAVIO TKA, compared to conventional TKA (6 vs 18%; p=0.051)



Significantly lower rate of outliers of the frontal tibial component for NAVIO TKA compared to conventional TKA (p=0.038)

Overview

- A case-controlled, retrospective study comparing the use of NAVIO Surgical System and a matched cohort of conventional TKA, performed between May 2018 and March 2019
 - NAVIO TKA (n=77)
 - Conventional TKA (n=77)
- Planned and achieved mechanical axis (MA) was calculated
 - Outliers were >3° deviations
- Alignment and component positioning were measured using a full-leg, weight-bearing X-ray, taken preoperatively and at week 6 postoperatively

Results

- At 6 weeks post-TKA, compared to conventional TKA, NAVIO TKA resulted in:
 - Lower rate of MA outliers (6 vs 18%; p=0.051; Figure)
 - Significantly reduced rate of outliers in the frontal tibial component (0 vs 8%; p=0.038)
 - Improved postoperative MA (180.1 vs 179.1°; p=0.028)

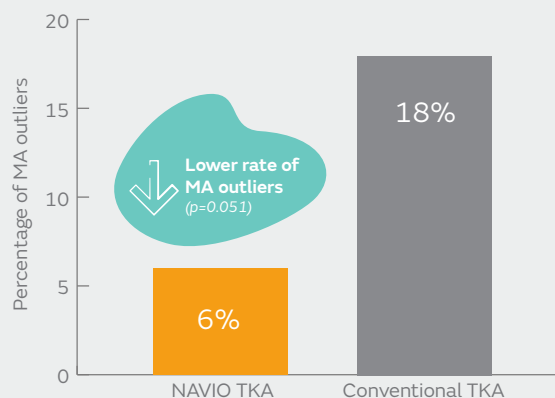


Figure: Percentage of MA outliers with NAVIO TKA and conventional TKA

Conclusions

NAVIO TKA allowed the surgeon to accurately achieve the planned mechanical axis, with significantly fewer outliers than conventional TKA.

Citation

* Bollars P, Boeckxstaens A, Mievis J. et al. Preliminary experience with an image-free handheld robot for total knee arthroplasty: 77 cases compared with a matched control group. *Eur J Orthop Surg Traumatol*. 2020;30:723–729.

Available at: [European Journal of Orthopaedic Surgery & Traumatology](#)