



Functional outcome after computer-assisted versus conventional total knee arthroplasty: a randomized controlled study.

Knee Surg Sports Traumatol Arthrosc. 2010 Oct; 18(10):1399-44

Lützner J. et al.

ABSTRACT

Despite the frequent use of computer-assisted total knee arthroplasty (TKA) and better radiological results for coronal alignment reported in many studies, there is still no evidence of improved clinical outcomes when compared to conventional TKA. We compared alignment after navigated TKA and conventional TKA in 80 randomized patients. Seventy three patients were available for physical and radiological examination at 20 month after surgery. Both groups showed similar Knee Society Score results, with medians of 89 points (navigated 49–95 points, conventional 48–95 points, n.s.) in the Knee Score and 70 points (navigated 45–100 points, conventional 40–100 points, n.s.) in the Function Score.

The median improvement in the Knee Society Knee Score was 45 points (-3 to 88 points) in the navigated group and 35 points (-13 to 62 points) in the conventional group (P = 0.03), and the Knee Society Function Score improvement was 15 points (-10 to 50 points) in the navigated group versus 10 points (-10 to 50 points) in the conventional group (n.s.).

The current health state at follow-up using the EuroQuol questionnaire was similar in both groups, with medians of 67 points in the navigated group and 65 points in the conventional group.

This investigation did show slightly greater functional improvement at short-term follow-up in the navigated TKA group. Longer follow-up will be required to assess the possible benefit of computer-assisted navigation.

SUMMARY

After a randomized controlled trial including 40 navigated and 40 conventional TKA surgeries a follow-up was done 20 months postoperatively. Evaluated were the preoperative and postoperative functional results after this short term using the KSS (Knee Society Score) and other scores.

The KSS is divided into the knee score and the function score. The knee score is based on pain, range of motion, stability and alignment of the leg. The function score is based on activities of daily living.

✓ CONCLUSION

Computer-assisted TKA leads to a significant improvement (P = 0.03) in Knee Society Knee Score after 20 months.

“This investigation did show slightly greater functional improvement at short-term follow-up in the navigated TKA group.”

“[...] the improvement in the Knee Society Knee Score was statistically significant.”

Long-term follow-up needed to evaluate lower revision rates due to navigation.

“[...] it may take a longer period of follow-up to evaluate whether better alignment after navigated compared to conventional TKA may reduce wear and consequently result in lower revision rates.”