✚ Evidence in focus

Poster summary: Davis ET, et al. *WAC* (2021)*

Smith+Nephew

Computer-guided THA is associated with reduced risk of revision and increased patient satisfaction compared to conventional THA in the National Joint Registry (NJR) of England, Wales and Northern Ireland

✚ Plus points

Compared to conventional THA, computer-guided THA with Smith+Nephew acetabular components demonstrated:

- **10 years** — Significantly **lower revision rate** **1.06 vs 3.88%** (p=0.005)
- **55%** Significantly **lower risk of revision** (p=0.038)
- Significantly **higher patient satisfaction** (p=0.003)

Overview

- An analysis of the effect of computer guidance on the survival of THA implants and on patient satisfaction using the NJR† dataset and linked patient-reported outcome measures (PROMs)
- THA surgery performed using Smith+Nephew cementless acetabular components implanted for osteoarthritis between April 2003 and February 2020
  - THAs with metal on metal bearing surfaces were excluded
- Cementless and hybrid cohort:
  - Conventional THA; n=41,683 (mean follow-up, 5.2 years; max, 16.9 years)
  - Computer-guided THA; n=871 (mean follow-up, 5.6 years; max, 15.7 years)
- A sub-analysis was performed on THA with cementless stems:
  - Conventional THA; n=29,785
  - Computer-guided THA; n=761

Results

Cementless and hybrid cohort 10-year survivorship

- Significantly lower revision rate with computer-guided THA than with conventional THA (1.06 vs 3.88%, p=0.005; Figure)
  - Revision risk was 55% lower with computer-guided versus conventional THA (p=0.038)

Cementless cohort 10-year survivorship

- Significantly lower revision rate with computer-guided THA than with conventional THA (1.2 vs 3.99%, p=0.013)
  - Revision risk was 53% lower with computer-guided versus conventional THA (p=ns)

PROMs

- Satisfaction rate was significantly higher in the computer-guided group compared to conventional THA (p=0.003; cementless only, p=0.039)
- Although there was a trend to improved scores with computer-guided THA, there was no statistically significant difference in the 6-month Oxford Hip Score, EQ-5D, EQ-VAS and success rates

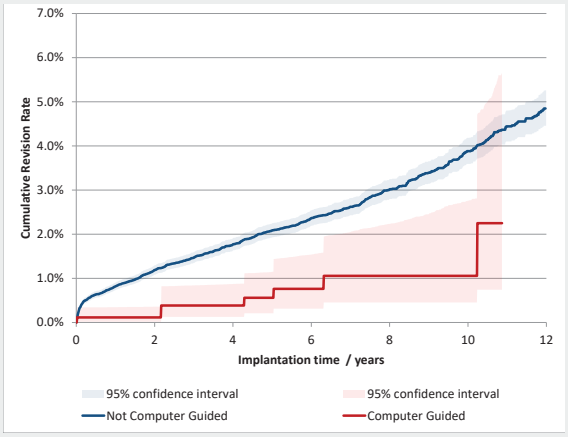

Figure. Cumulative revision rate of computer-guided THA compared to conventional (not-computer guided) THA, with endpoint as any revision

Conclusions

The use of computer-guided surgery was associated with a significant reduction in the risk of early revision and significantly improved patient satisfaction compared to non-computer guided surgery in this analysis of Smith+Nephew acetabular components for THA.

Citation

*Davis ET, McKinney KD, Kamali A, Kuljaca S, Pagkalos J. Computer guided total hip arthroplasty is associated with a reduced risk of revision and increased patient satisfaction. An analysis of a single manufacturer acetabular components from the National Joint Registry of England, Wales, Northern Ireland and the Isle of Man. Poster presented at: World Arthroplasty Congress (WAC) Virtual Meeting; April 22–24, 2021.

†The data used for this analysis was obtained from the NJR Supplier Feedback System. The Healthcare Quality Improvement Partnership ("HQIP") and/or the National Joint Registry ("NJR") take no responsibility for the accuracy, currency, reliability and correctness of any data used or referred to in this report, nor for the accuracy, currency, reliability and correctness of links or references to other information sources and disclaims all warranties in relation to such data, links and references to the maximum extent permitted by legislation.

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