Midterm survivorship and patient satisfaction of robotic-arm assisted medial unicompartmental knee arthroplasty: a multicenter study[1]

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Goal of study

To determine midterm survivorship, modes of failure, and satisfaction of robotic-arm assisted medial UKA

Materials and methods

- Prospective, multicenter study at 4 separate institutions
- Surgeries occurred between March 2009 and December 2011
- 473 consecutive patients (528 knees) underwent robotic-arm assisted medial UKA surgery using a fixed-bearing, metal-backed onlay tibial component (Restoris MCK)
- Data were collected for 384 patients (432 knees) with a mean follow-up of 5.7 years (5.0-7.7) and follow-up rate of 81.2%
- Each patient was contacted at minimum 5-year follow-up and asked a series of questions to determine survival and satisfaction
- Kaplan-Meier method was used to determine survivorship

Results

- 97% survivorship at minimum 5-year follow-up (**Fig. 1**)
- Modes of failure:
  - Aseptic loosening (7/13), pain (4/13), progression of OA (1/13), unknown in 1 patient
  - 14 reoperations performed, mostly arthroscopic soft tissue procedures (partial lateral meniscetomy, debridement, or removal of loose body)
- 91% of patients reported either very satisfied or satisfied with their knee function (**Fig. 2**)

Conclusion

- In this multicenter study, robotic-arm assisted UKA showed high survivorship and good to excellent satisfaction rates and midterm follow-up
- Improved survivorship compared to current literature (**Fig. 1**) possibly due to improved accuracy and precision to plan in alignment and component positioning, and soft tissue balancing, when using robotic-arm assisted surgery compared to conventional techniques
- Patient contact planned at 10-year follow-up

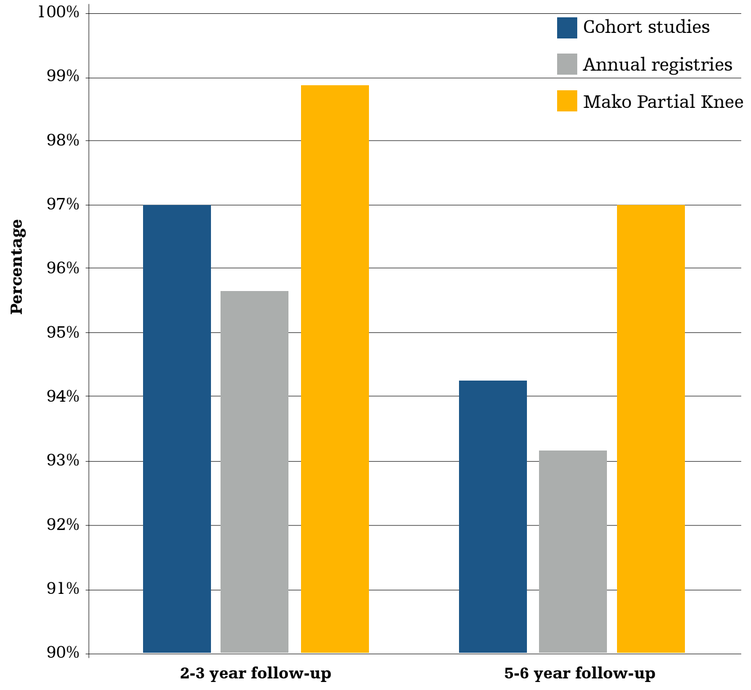

Fig. 1

Survivorship data from Pearle et al. (2017)[2] and Kleeblad et al. (2018)[1] on robotic-arm assisted PKA compared to studies in literature and annual registries reporting 2 to 3 years and 5 to 6 years conventional PKA survivorship data

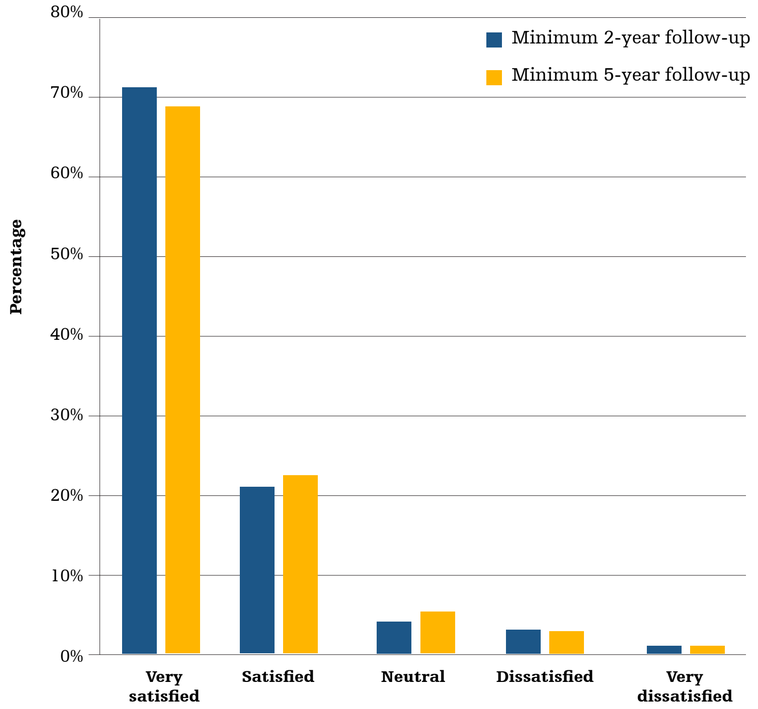

Fig. 2

Mid-term patient satisfaction with medial Mako Partial Knee procedures (Kleeblad et al., 2018 and Pearle et al., 2017)[1,2]

References:

1. Kleeblad LJ, Borus T, Coon T, Dounchis J, Nguyen J, Pearle A. Midterm Survivorship and Patient Satisfaction of Robotic-Arm Assisted Medial Unicompartmental Knee Arthroplasty: A Multicenter Study. The Journal of Arthroplasty. 2018: 1-8.
2. Pearle AD van der List JP, Lee L, Coon TM, Borus TA, Roche MW. Survivorship and patient satisfaction of robotic-assisted medial unicompartmental knee arthroplasty at a minimum two-year follow-up. Knee. 2017;24(2):419-428.