MAKOplasty UKA Results in Less Pain, More Accurate Alignment Than Those Receiving Manually Placed Oxford® Implants[1]

A Randomized Controlled Trial Comparing Accuracy and Outcomes of Robotic Arm Assisted UKA to Manual UKA

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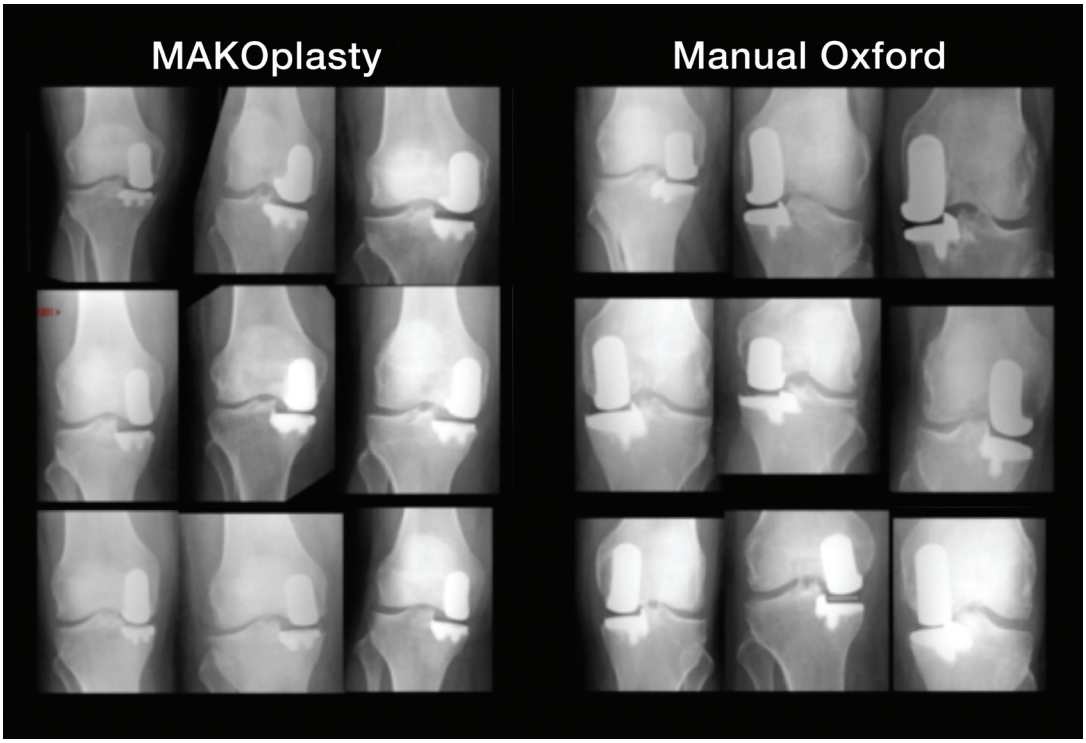


X-Rays from first nine consecutive cases for each group

Study Summary

- Initial results of first 100 patients from the prospective, single center, randomized controlled trial (RCT) comparing MAKOplasty UKA (RESTORIS® MCK implants) to manually placed Biomet Oxford* implants
- VAS (Visual Analog Scale) was used to measure patient-reported pain levels
- Alignment outcomes were based on a post-operative CT protocol, which compared planned versus achieved alignment in three different planes for both the tibia and femur

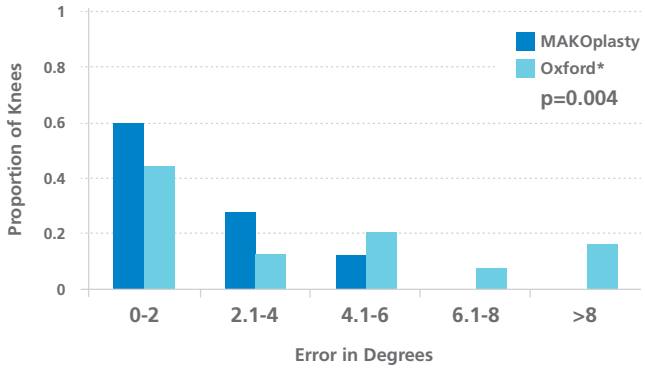
Results

- MAKOplasty resulted in significantly lower post-operative pain from day 1 to 8 weeks post-op ($p<0.05$)
- MAKOplasty resulted in higher accuracy in all dimensions measured, with statistical differences ($p<0.01$) in four of the six dimensions
- A significantly higher percentage of MAKOplasty patients had excellent American Knee Society Scores at three months ($p=0.0031$)

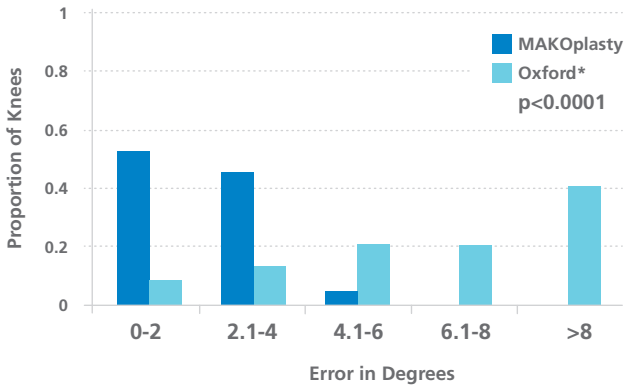
*Oxford® is a registered trademark of Biomet, Inc.

MAKOplasty® UKA Has Superior Alignment Compared To Manually Placed Oxford® Implants[1]

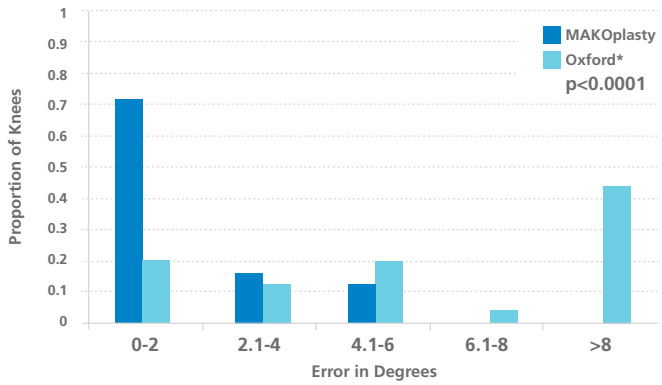
Femur Varus/Valgus



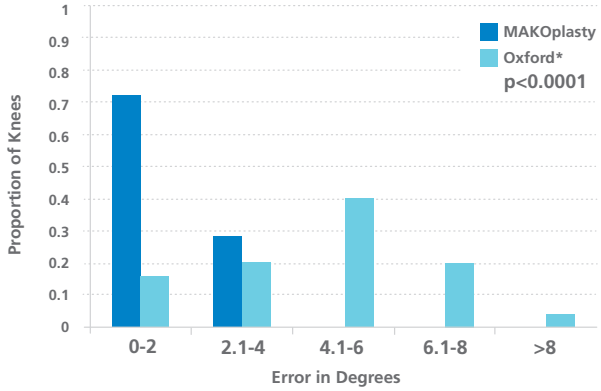
Femur Flexion/Extension



Tibia Internal/External Rotation



Tibial Slope



- Alignment assessment included six different parameters:
  – Femoral and tibial varus/valgus alignment, femoral flexion and tibial slope alignment, and femoral and tibial rotation
- Errors in tibial component slope have been shown to be predicators of implant failure[2]
- MAKOplasty UKA cases were compared to surgical plan
- Manual Oxford cases were compared to target values in surgical technique

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Reference

1. Blyth MJ, Smith J, Jones B, MacLean III AB, Anthony, Rowe P. Does robotic surgical assistance improve the accuracy of implant placement in unicompartmental knee arthroplasty? AAOS 2013 Annual Meeting, Chicago, IL.
2. Hernigou P, Deschamps G. Posterior slope of the tibial implant and the outcome of unicompartmental knee arthroplasty. *J Bone Joint Surg Am.* 2004:86(3):506-511.

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