Editorial



# What is the best option for young, active patients with knee arthritis?

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*Comment on:* Krych AJ, Reardon P, Sousa P, *et al.* Unicompartmental Knee Arthroplasty Provides Higher Activity and Durability Than Valgus-Producing Proximal Tibial Osteotomy at 5 to 7 Years. J Bone Joint Surg Am 2017;99:113-22.

Received: 26 February 2018; Accepted: 17 March 2018; Published: 27 March 2018.

doi: 10.21037/aoj.2018.03.06

**View this article at:** http://dx.doi.org/10.21037/aoj.2018.03.06

It is with great interest that we reviewed the recent research publication by Krych *et al.*, *Unicompartmental Knee Arthroplasty Provides Higher Activity and Durability Than Valgus-Producing Proximal Tibial Osteotomy at 5 to 7 Years* (1). The authors sought to determine retrospectively whether a valgus producing proximal tibial osteotomy (PTO) or a medial unicompartmental knee arthroplasty (UKA) offered younger, more active patients the best post-operative outcomes with respect to activity level, function, and durability. The average age of 57 patients in the PTO group was 42.7 years, while the average age of 183 patients in the UKA group was 49.2 years. After an average follow up of 5.8 years, the survivorships of the PTO and UKA groups were 77% and 94%, respectively. The average time to failure of the UKA group was 42 months, while the PTO group failed at an average of 98 months. Patients treated with UKA reached a higher level of function and activity at 3 months compared to PTO, and this advantage persisted at mid-term follow up.

While these results challenge the conventional perception that PTO is the most appropriate procedure for younger, more active patients, it is important to note that there is a substantial difference in average age between the PTO and UKA cohorts (42 *vs.* 49 years, respectively) and that both procedures display inadequate durability with unacceptably high failure rates. Nearly 25% of the PTO patients failed at only 8 years post-operatively. Furthermore, the UKA group showed a 6% failure rate at only 3.5 years post-operatively. It has been well-documented in the literature for over 20 years that an eventual conversion total knee arthroplasty (TKA) following a failed PTO or UKA comes with a higher complication rate and a poorer clinical outcome than primary TKA itself (2-9). Instead, the conversion procedure is more akin to a revision TKA. Surgeons must therefore appropriately counsel patients regarding durability and revision prior to undergoing PTO or UKA.

Additionally, it is appropriate for surgeons to consider TKA as a third, long-term option for younger, more active patients. The senior members of our group performed 114 TKAs in 88 patients with an average age of only 51 years old (range of 22 to 55 years) (10). All but 6 knees were available for initial follow up at 18 years post-operatively. The overall rate of survivorship of the femoral and tibial components was 94%. Subsequent 30-year follow up of 108 TKAs in 84 patients demonstrated an 82.5% survivorship of the femoral and tibial components (11). Most notably, the 30-year survivorship of patients with monoblock polyethylene tibial components was 92.3%. Patients had mean Tegner and Lysholm activity scores of 3.0, Knee Society Scores of 87.4, Knee Society functional scores of 62.1, and an average knee motion of 110 degrees. In total, these data should remind surgeons that monoblock TKA is a viable, long-term alternative for younger, more active patients.

## Acknowledgments

*Funding:* None.

## Footnote

*Provenance and Peer Review:* This article was commissioned

and reviewed by the Section Editor Jun Lu, MD, PhD (Zhongda Hospital, Medical School of Southeast University, Nanjing, China).

*Conflicts of Interest*: The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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doi: 10.21037/aoj.2018.03.06
**Cite this article as:** Mercuri JJ, Long WJ. What is the best option for young, active patients with knee arthritis? Ann Joint 2018;3:22.