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## THE EFFECT OF NEW SURGICAL INSTRUMENTATION ON THE CLINICAL OUTCOMES OF UNICOMPARTMENTAL KNEE REPLACEMENTS - A REGISTRY BASED STUDY

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**Background:** Unicompartmental knee replacement (UKR) offers advantages over total knee replacement but has higher revision rates. New instrumentation known as Microplasty was introduced to address this. We compared the revision rates of UKRs implanted with Microplasty and traditional instrumentation.

**Methods:** National Joint Registry (NJR) data was used to propensity score match 15,906 UKRs (7,953 Microplasty and 7,953 Non-Microplasty) for various patient, implant and surgical factors. Cox regression models were used to compare implant survival.

**Results:** The five-year implant survival for Microplasty and Non-Microplasty UKRs were 96.7% (95% CI 96.0-97.2) and 94.5% (CI 93.8-95.1), respectively. The revision rate for Microplasty UKR was significantly lower than that of Non-Microplasty UKRs (hazard ratio [HR] = 0.77, p = 0.008). Compared with Non-Microplasty UKRs, the revision rate of Microplasty UKRs implanted during the year after the introduction of Microplasty was lower, but not significant (HR = 0.86, p = 0.23), whereas for those implanted more than a year after introduction, the difference was significant (HR = 0.69, p = 0.004).

**Conclusion:** Microplasty instrumentation improved 5-year UKR implant survival. The revision rate did not increase for Microplasty UKRs implanted during the first year of its introduction, suggesting no adverse learning curve effect. Microplasty UKRs implanted after this transition period had a 31% lower revision rate than those implanted with conventional Non-Microplasty instrumentation.

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## NATIONAL JOINT REGISTRY IMPLANT PRICE-BENCHMARKING FOR PRIMARY TOTAL KNEE ARTHROPLASTY: ARE WE ACCOUNTING FOR ALL VARIABLES IN BICONDYLAR ARTHROPLASTY?

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**Background:** The National Joint Registry (NJR) monitors implant price and issues reports at a surgeon and unit level. Favourable pricing is usually related to volume of implantation. At surgeon-level, implant-type is the main factor determining implant-spend. The NJR groups knee arthroplasty into hinge/linked, patellofemoral, bicondylar and unicondylar. We investigated the use of implants within the bicondylar group hypothesising this was a clinically heterogeneous group that may account for pricing variation not identified by the NJR.

**Methods:** We retrospectively reviewed theatre lists and radiographs of all the bicondylar knee replacements in a large tertiary-referral elective unit over 12-months collecting data on implants. Standard implants with the most favourable costing were cemented cruciate retaining (CR) without augmentation or custom coatings.

**Results:** 496 bicondylar knee arthroplasties were performed by 8 consultants. 98 implants were non-standard. Of these, 62 were cruciate sacrificing, 20 oxinium implants for nickel allergy, 9 were uncemented 6 required augmentation and 1 required patient-specific instrumentation.

**Conclusion:** In our unit 19.8% of bicondylar knees were non-standard compared to cemented CR-knees, thus incurring higher implant-spend. Complex cases are connected to higher implant-spend which is not accounted directly for in the current NJR costing exercise. This could prove disadvantageous in the NJR pricing exercise to units performing a higher proportion of complex cases. Considering the above findings, we advocate in addition to using median cost that complexity of cases is factored into comparison between units to enhance accuracy of implant price-benchmarking. Further work regionally and nationally is required to contextualize these findings in relation to clinical indication and implant-spend.

**Appendix A.** Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.knee.2020.07.071.

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## A MULTI-SOURCE PATIENT PAIN DIARY DEMONSTRATES DIFFERENCES BETWEEN PARTIAL AND TOTAL KNEE REPLACEMENT PATIENTS IN PAIN SUBTYPES AND ADDITIONAL CONCOMITANT DIAGNOSES AFFECTING OPERATIVE RECOVERY: "PICKING A WINNER" MAY NOT BE AS EASY AS WE THINK

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