



Paper #13

## The Use of Trabecular Metal Cones in Complex Primary and Revision Total Knee Arthroplasty

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**Introduction:** TKA in the setting of osseous defects has multiple management options, however, the optimal treatment strategy remains controversial. The purpose of this study is to report the clinical and radiographic results of trabecular metal cones in managing osseous defects in the setting of complex primary and revision TKA.

**Methods:** 129 consecutive TKAs utilizing trabecular metal cones were retrospectively reviewed for clinical and radiographic outcomes. 25 had less than 2 years of follow-up and 7 died, leaving 96 patients for evaluation. This cohort included 86 tibias with 11 type 1, 25 type 2a, 43 type 2b, and 7 type 3 defects, and 27 femurs with 1 type 1, 9 type 2a, 16 type 2b, and 1 type 3 defects based on the AORI classification. There were 28 males and 68 females, with an average age of 68 years, and average BMI of 35.0. Six were primary and 90 were revision TKAs. Continuous variables were evaluated using a t-test.

**Results:** Twelve patients required revision leaving 84 knees (87.5%) with the cones in place at an average of 31 months of follow-up (range 24-77.3 months). The mean KSS score increased from 51.0 pre-operatively to 80.2 post operatively ( $p < 0.0001$ ). The mean KSS functional score increased from 32.9 pre-operatively to 47.8 post operatively, ( $p = 0.0002$ ). Including the 12 revisions, there were 22 knees requiring re-operation (22.9%), another 17 requiring manipulation under anesthesia, and 4 additional non-operative complications (1 foot drop, 1 stress fracture, 2 superficial infections). 83 of 84 (98.8%) unrevised knees were radiographically osseointegrated without signs of subsidence or migration.

**Conclusion:** Trabecular metal cones are an effective treatment strategy for osseous defects in the setting of TKA. While there was a relatively high rate of post-operative complications, in this difficult patient population, there were significant improvements in KSS scores with a high rate of osseointegration at an average of 31 months follow-up.

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