

Background: Segmental replacement of proximal and distal femurs is common in total hip and knee revisions. The use of off the shelf, modular segments, with various lengths of segments anchored by Morris tapers is necessary. Both the distal femur and proximal femur or segments, usually have metal backing to the intramedullary stem, for which if revision is required can be disassociated from the stem. This is necessary for incorrect sizing or for such clinical complications as dislocation, infection and associated shortening.

Questions; Can long titanium-titanium Morris tapered be disassociated from segments in revision hip or knee surgery?

Methodolgy: Five patients treated with reconstructions using a modular prosthetic replacement in hips and knees had secondary problems such as dislocation or infection. Stems with the prosthesis were tapered from the widest portion at the segmental Morris taper to the thinner stem, and titanium-titanium Morris taper. Attempts for replacement required disassociation of the stem, which couldn't be performed with devices meant for the device as there was no point of leverage to the modular component and the titanium-titanium tapered couldn't be disassociated with standard tools provided.

Results: All five patients undergoing revisions of total joints for dislocation or infection, could not have disassociation of the segment from the stem. The bone to segment articulation with the Morris taper, had no metal backed mechanism to release the Morris taper without further destruction of bone. The enlarged tapered stem, adjacent to the Morris taper, did not allow for further for removal of the stem, without further resection of bone beyond the tapered portion of the stem.

Conclusion: An enlarged titanium-titanium Morris taper, used in total joints is hard to disassociate from the stem and segmental components without a metal sleeve on the stem. Bone can't be use as a lever arm without destroying the bone, as the force generated to disengage the taper is too great. Widened taper stems adjacent to the Morris taper, result in additional resection of the diaphyseal fixated bone. Titanium on titanium results in a cold weld that can't be disassociated by standard means.