Mesh Reconstruction of the Extensor Mechanism: Mid-Term Follow Up of 93 Total Knee Arthroplasties

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INTRODUCTION: Mesh reconstruction of the extensor mechanism following total knee arthroplasty (TKA) has demonstrated excellent early results. However, data are limited on the mid-term results. The purpose of this study was to evaluate longer-term results of mesh reconstruction of the extensor mechanism in the largest series to date.

METHODS: Ninety-three patients (93 TKAs) underwent extensor mechanism reconstruction with mesh between 2000-2015 at the institution where the technique was innovated. Seventy-seven reconstructions were aseptic, and 16 were performed as part of a two-stage exchange for infection. Mean age was 64 years, mean BMI was 35 kg/m^2, and 63% were female. Twenty-four percent had a prior attempt at an extensor mechanism reconstruction, and 73% had components concurrently revised. Mean follow up was 8 years.

RESULTS: Seventy-six of 93 (82%) mesh reconstructions were free of mesh revision for mesh failure. Indications for mesh revision included 8 patellar tendon reruptures, 7 quadriceps tendon reruptures, and 2 cases of symptomatic lengthening. The 10-year cumulative incidence of mesh revision for mesh failure was 20%. There were 7 additional cases of symptomatic lengthening treated nonsurgically. The 10-year cumulative incidence of any mesh revision/removal was 27% (7 removed for the treatment of infection). The 10-year cumulative incidences of any revision and reoperation were 15% and 37%, respectively. Extensor lag improved by a mean of 28° with a mean extensor lag of 9° at most recent follow up. Knee Society scores improved significantly ($p<0.001$).

DISCUSSION AND CONCLUSION: This is the first mid-term study, and in the largest numbers, to show that mesh reconstruction is a durable and reliable technique to treat both aseptic and septic disruptions of the extensor mechanism. The 10-year cumulative incidence of mesh revision was excellent in this complex patient cohort at 20%, and the mean improvement in extensor lag was good at nearly 30°.