

Isolated Liner Exchange vs. All-Component Revision for Instability after Total Knee Arthroplasty

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INTRODUCTION: Instability is a common cause for revision total knee arthroplasty (TKA). The risks and benefits of polyethylene liner exchange as compared to full metal component revision continues to be debated. The purpose of this study was to investigate the success rate and complication profiles of revision TKA for instability at an academic center based on surgical procedure.

METHODS: This was a retrospective cohort study of patients undergoing revision TKA for instability from 2015-2019 with minimum two-year follow up. Patients with prior revisions were excluded. Patients undergoing isolated polyethylene liner exchange without an increase in constraint (LE) were compared with patients undergoing full femoral and tibial component revision (FCR). The primary outcome was differences in rerevision for instability. Non-instability reoperations, 90-day medical readmissions, and length-of-stay were also compared.

RESULTS: The study included 42 LE and 48 FCR patients. No differences were found in age (LE 66.7±7.8 vs. FCR 67.3±9.5 years, p=0.736) or female sex (LE 57.1% vs. FCR 62.5%, p=0.605). BMI was higher in the FCR group (LE 29.1±6.2 vs. FCR 32.7±6.2 kg/m², p=0.008) as were higher ASA scores (ASA3: LE 35.7% vs. FCR 62.5%, p=0.04). Liner exchanges had a 10.1% higher rerevision for instability that approached statistical significance (LE 14.3% vs. FCR 4.2%, p=0.092). Additionally, FCR had 4.2% aseptic loosening and 4.2% periprosthetic-joint-infection, whereas LE had none (p=0.181). FCR also had a longer length-of-stay (LE: 1.8±0.9 vs. FCR 3.0±1.3 days, p<0.001). No differences were found in 90-day medical readmissions (LE 7.1% vs. FCR 4.2%, p=0.661).

DISCUSSION AND CONCLUSION: Although no significant failure-rate difference was found in the present study, all-component revision for TKA instability may have a higher success rate than isolated liner exchange. Nevertheless, with appropriate patient selection and risk-benefit discussion, isolated liner exchange may be a reasonable surgical option for TKA instability with a lower complication profile and length-of-stay.