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The feasibility of a prospective cohort to assess improvement after partial medial meniscectomy by the Portland Pivot Kick physical exam maneuver?

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Keywords

Orthopaedic Surgery, Knee Surgery, Meniscus Tear

Abstract

Objective

The efficacy of partial meniscectomies in patients with osteoarthritis is currently debated. The purpose of this study is to determine the effectiveness of a novel physical exam maneuver, the Portland Pivot Kick (PPK), in predicting the potential benefit of arthroscopic partial medial meniscectomy in treating mechanical symptoms, even in the presence of osteoarthritis.

We theorize that differentiating the presence of mechanical symptoms from those of degenerative joint disease in medial meniscus tears can be a prognosticator of improvement of symptoms following surgical intervention. We hypothesize that patients with a positive preoperative PPK will have improvement of mechanical symptoms and significantly improved subjective outcomes scores following arthroscopic partial medial meniscectomy.

Methods

This IRB approved prospective observational cohort study of orthopedic patients at the VA Portland Health Care System (VAPORHCS). All adult veteran patients who are seen at the Sports Orthopedic Clinic at VAPORHCS with a medial meniscal tear proven on MRI will be offered inclusion in the study. Exclusion criteria include any patients with prior surgery on the index knee, an intraarticular loose body on MRI, an anterior and/or posterior cruciate ligament tear, a bucket handle tear, or meniscal tear deemed amenable to repair rather than partial meniscectomy.

Patients are evaluated using a standard physical examination, including the PPK. Radiographs of the affected knee are evaluated to determine the extent of osteoarthritis via the Kellegren Lawrence grading system. Questionnaires include subjective patient outcomes scores, specifically the Knee Injury and Osteoarthritis Outcome Score (KOOS) and the Western Ontario McMaster Osteoarthritis Index (WOMAC).

An a priori power analysis was performed assuming a power of 0.8 and an alpha of 0.8 which predicted a sample size (n) between 50-64 patients. We anticipate around a 10% drop out rate due to loss of follow up after surgery. We plan to enroll 75 patients over the course of a 24-month period.

Data

Forty-one patients have consented to the study (since October 2019), 21 of the 41 have elected for surgical intervention, and 9 of the 21 are currently in the postoperative phase. It is predicted that enrollment will be completed within approximately nine months.