TWO YEAR POST-ARTHROSCOPY OUTCOMES IN PATIENTS UNDERGOING PARTIAL MENISCECTOMY: THE INFLUENCE OF SYNOVIAL INFLAMMATION

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Purpose: Synovitis is a variable feature of knee OA, but has been reported in up to 86% of patients with radiographic OA, and is associated with symptom levels and progression of disease. We previously showed that synovitis detected by biopsy is also a frequent feature in patients with meniscal tears undergoing arthroscopic partial meniscectomy, even in the absence of radiographic changes. Despite no radiographic evidence of OA, 80% of these patients had evidence of early-stage cartilage degeneration when examined intra-operatively. Synovitis correlated with pre-operative symptom severity in these patients, and was associated with a specific pattern of chemokine expression (IL-8, CCL5, CCL19 and CCR7). These patients were followed longitudinally post-arthroscopy to determine whether the presence of synovitis predicts knee symptoms up to 2 years post-operatively.

Methods: Thirty-three patients scheduled for arthroscopic partial meniscectomy with a history of knee injury, a meniscal tear identified on pre-operative MRI, but without radiographic evidence of knee OA were recruited from the Orthopedic practices at the New England Baptist Hospital. Cartilage integrity was evaluated intra-operatively and graded using the Outerbridge classification. Symptoms were assessed with the Lysholm score, which measures knee-specific symptoms and dysfunction on a scale of 0 to 100, with 0 indicating the worst symptoms/dysfunction and 100 indicating absence of symptoms. Lysholm scores were collected pre-operatively, and post-operatively at 16 weeks, 1 year and 2 years. A total of 26 patients completed the 2 year follow-up. Synovial biopsies were taken at the time of surgery, and synovitis scored on Hematoxylin & Eosin stained sections using a semi-quantitative scoring system. We used a linear mixed effects model to study whether synovitis impacted Lysholm scores over time, adjusting for age, BMI, gender and cartilage Outerbridge score.

Results: There were significant improvements from the pre-operative baseline Lysholm scores at all three post-operative time points (Kruskal-Wallis p<0.0001), with a mean (+/-SD) improvement at 2 years of 27 (+/-16) points. Despite having worse pre-operative Lysholm scores, patients with synovitis did not generally have worse Lysholm scores compared to patients without in follow-up (p=0.05). Given lower pre-operative Lysholm scores, synovitis was associated with greater improvement in scores over time, adjusting for age, BMI, gender and cartilage score (p=0.003 at 16 weeks, p=0.026 at one year, and p=0.030 at two years). The mean 2-year Lysholm scores did not differ significantly between patients with or without synovitis (p=0.31). However, four of twelve (33%) patients with synovitis had Lysholm scores below 80 at two years, compared with one of sixteen (6%) without synovitis. Patients with synovitis were less likely to have Lysholm scores > 80 at two years post-op (adjusted OR 0.02, 95% confidence interval 0.00 to 0.81). Conclusion: In this pilot study of patients undergoing arthroscopic partial meniscectomy, patients with synovitis had significantly worse Lysholm scores at baseline, and demonstrated greater improvements in follow-up, indicating that the presence of synovitis does not preclude a favorable response to surgical intervention up to 2 years post-operatively. However, the patients with synovitis were less likely to have Lysholm scores indicating only mild symptoms (above 80) compared to patients without synovitis at 2 years post-operatively. As the majority of patients in this pilot study did well, larger numbers and longer follow-up may be needed to determine whether the presence of synovitis predicts less favorable long-term outcomes.

312 TRAJECTORIES OF FUNCTIONAL RECOVERY POST TKR: DOES BMI MATTER?


Purpose: More than 600,000 total knee replacements (TKRs) are performed in the US annually including many on persons who are obese. Published data on whether obesity adversely affects outcomes of TKR are conflicting. Most studies have focused on perioperative complications; little is known about whether obese and non-obese TKR recipients differ in pre-operative clinical characteristics, nor about whether obesity affects trajectory of post-TKR functional recovery.

Methods: We conducted a prospective cohort study of consecutive patients undergoing TKR at a tertiary medical center. Subjects were followed with phone surveys bi-weekly during the first two months and monthly during the subsequent four months. We stratified subjects by BMI as normal weight (BMI<25), overweight (25≤BMI<30), obese (30≤BMI<35), severely obese (35≤BMI<40) and morbidly obese (BMI≥40). We examined whether demographic and clinical characteristics of obese persons undergoing TKR differ from those who are not obese. We also evaluated functional trajectories among those who are and are not obese. In addition we examined whether obesity influenced inpatient costs.

Results: Out of 116 subjects enrolled, 50% were obese (BMI≥30 kg/m2) and 19% were severely or morbidly obese (BMI≥35 kg/m2). Age at TKR did not differ by obesity status. Among women 29% were severely or morbidly obese compared to 9% among men. Higher BMI prior to TKR was associated with worse baseline functional status and greater pain scores. In general, irrespective of obesity status, all groups achieve substantial functional improvement (Figure). The absolute improvement was greater in those with higher BMI over the 6 month post-TKR recovery period. Those who