CHANGING TRENDS IN TREATMENT OF MENISCAL TEARS IN THE SETTING OF CONCOMITANT ACL TEAR IN PEDIATRIC AND ADOLESCENT PATIENTS: A MARKETSCAN INSURANCE DATABASE STUDY

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Introduction: Meniscal tears are commonly present in patients undergoing anterior cruciate ligament (ACL) reconstruction. Decision-making between meniscus repair and partial meniscectomy involves a number of factors from tear pattern to surgeon expertise and available technology. While meniscal and ACL tears in pediatric and adolescent patients are rising in incidence, changes in treatment of meniscus tears in the setting of ACL reconstruction have not been previously demonstrated.

Purpose: To describe the trends of meniscal repair or meniscectomy in the setting of an ACL reconstruction among pediatric and adolescent patients utilizing the MarketScan Database from 2006 to 2018.

Methods: The Truven Health Analytics MarketScan Commercial Claims and Encounters database was assessed to access health care utilization data for privately insured individuals younger than 18 years old. ACL reconstruction records performed between 2006 and 2018 were obtained using Current Procedures Terminology (CPT), and International Classification of Diseases Ninth Revision (ICD-9) and Tenth (ICD-10) codes. Inclusion criteria included at least 180 days of insurance coverage after intervention. Relative rates of MY and MR were compared by year in the mid-2000s (2006-2007) were compared to the late 2010s (2017-18) and were sub-stratified by age and estimated skeletal maturity.

Results: A total of 44,501 patient under 18 years of age undergoing ACL reconstruction were identified. Meniscal tears were present in 57.0% of patients and treated with partial meniscectomy in 30.3% (n=13,482) and meniscal repair in 26.7% (n=11,884). Prevalence of meniscal injury in setting of ACL-R increased significantly with age, with a 19% increase from <12 years old (40.4%) to 17 years old (59.4%, p <0.001). Over the 12-year time period, rates of meniscal tears treated at time of ACL-R was relatively constant (ranging from 56.5-60.4%) (Figure 1). However, the rates of meniscal repair increased significantly (Δ=21.2%, from 37.1% to 58.3%) as the rates of partial meniscectomy decreased (62.9% to 41.7%, p < 0.001) (Figure 2). Even with this increase in the number of repairs, there was no increase in overall rates of reoperation (4.2% v. 2.5%), including lysis of adhesions or subsequent meniscal procedures (meniscectomy, meniscal repair) over the time period analyzed.

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Conclusion: The current study demonstrates that at the time of ACL-R, meniscal pathology is common in pediatric patients. From 2006 to 2018, the rates of meniscal repair in the setting of ACL tears are steadily rising (32.8% to 51.8%) while partial meniscectomies are declining (67.2% to 48.2%), without an increase in early reoperation.

Figure 1: Rates of Isolated ACL-Reconstruction (ACLR) compared to rates of ACL-R with meniscal pathology over the study time period. Demonstrates a relatively constant rate of meniscal injury in the setting of ACL tears.
Figure 2: Rates of meniscal repair (ACL-MR) compared to Meniscectomy (ACL-MY) in the setting of ACL-Reconstruction (ACLR) over the study time period in pediatric patients (<18 years old). Demonstrates a trend towards an increase in the percentage of repairs performed and a subsequent decrease in meniscectomies per year.