Changing Demographics and Outcomes of Hip Arthroscopy: Who is at Risk for Conversion to Total Hip Arthroplasty?

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INTRODUCTION: Prior studies examining trends in hip arthroscopy (HA) are limited, with data extending only to 2014. Additionally, there remains concern regarding rates of conversion to total hip arthroplasty (THA) in patients who undergo HA. As technology has continued to advance, this study sought to examine recent trends in the utilization of HA, including 2 and 5-year conversion rates and risk factors associated with conversion from 2010 to 2022.

METHODS: Patients who underwent HA between 2010 and 2022 were identified in a large national database. Trends in the utilization of HA and the 2-year and 5-year rate of conversion to THA were observed using the compounded annual growth rate (CAGR) and Kaplan-Meier survival analyses, respectively. Multivariate logistic regression was performed to identify risk factors associated with conversion to THA, with Elixhauser comorbidities included as independent variables.

RESULTS: From 2010 to 2022, the overall incidence of HA decreased significantly (CAGR: -4.91%, p<0.001). There was a significant increase in the proportion of HAs performed for those aged 20-29 (CAGR: 5.78%, p<0.001) and 30-39 (CAGR: 2.33%, p<0.001) and a significant decrease for those aged 40-49 (CAGR: -0.61%, p=0.02), 50-59, (CAGR: -1.89%, p<0.001), 60-69 (CAGR: -1.62%, p<0.001) and 70-100 (CAGR: -0.78%, p=0.04). The highest 2 and 5-year conversion rates to THA were seen in those aged 50-59 at 3.5% and 5.4%, respectively. Risk factors associated with conversion included increasing age, female gender, and osteoarthritis.

DISCUSSION AND CONCLUSION: Overall utilization of HA has decreased over the past decade. While overall rates of conversion to THA were low, older patients, female patients, and those who have osteoarthritis should be carefully evaluated before proceeding with HA. Ultimately, careful risk stratification of patients may ensure arthroscopies are performed only in individuals who may benefit.

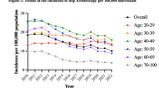Figure 1: Trends in the Incidence of Hip Arthroscopy per 100,000 individuals

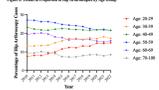Figure 2: Trends in Proportion of Hip Arthroscopies by Age Group

Figure 3: 5-Year Cumulative Incidence of Conversion to THA by Age at Hip Arthroscopy
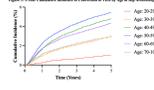

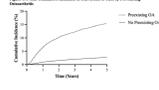Figure 4: 5-Year Cumulative Incidence of Conversion to THA by Pre-existing Osteoarthritis

Table 1: Frequency of Procedures Performed

Table 2: Cumulative Incidence of Conversion to THA at 2-Years and 5-Years Following Hip Arthroscopy