A Nationwide Comparison of Pharyngeal and Jaw Surgery for Sleep Apnea: Socioeconomic Differences and Complications

Ravi K. Garg, MD; Ying Shan, MS; Jeffrey A. Havlena, MS; Ahmed M. Afifi, MD

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INTRODUCTION: A report by the American Academy of Sleep Medicine suggests that maxillomandibular jaw advancement surgery is the most effective surgical intervention beyond tracheotomy for patients with severe obstructive sleep apnea.[1] Nonetheless, pharyngeal procedures are more commonly performed.[2] The aims of this study were to 1) identify socioeconomic factors associated with this phenomenon, and 2) determine differences in complications between adult patients receiving pharyngeal and jaw procedures for sleep apnea.

MATERIALS AND METHODS: All patients, age 14 or older, with a primary hospital diagnosis of sleep apnea were identified using the Nationwide Inpatient Sample (NIS) database obtained through the Healthcare Cost and Utilization Project (HCUP) from 2005-2012. The NIS is the largest available all-payer inpatient database in the United States, and approximates a 20% stratified sample of discharges from US community hospitals.[3] ICD9 codes were used to determine if a pharyngeal or jaw procedure was performed. Patient demographics, comorbidities and complications were compared. Chi squared test and Student's *t*-test were used for analysis.

RESULTS: Among 6,316 sleep surgeries, 5,964 (94.4%) were pharyngeal and 352 (5.6%) were jaw procedures. Women were significantly more likely to receive jaw surgery than men (OR 1.68, p=0.0007). African Americans (OR 0.19, p<0.0001), Hispanics (OR 0.42, p=0.0009), Asians (OR 0.41, p=0.0009), and other non-Caucasians (OR 0.19, p=0.0008) had a significantly lower odds of receiving jaw surgery than Caucasians. Patients falling into annual income brackets less than $63,000 (<$39,000, OR 0.39, p=0.02; and $48,000-62,999, OR 0.57, p=0.04), and patients with Medicare compared to private or HMO insurance (OR 0.46, p=0.008) also had significantly decreased odds of undergoing jaw surgery. Comorbidities were similar between surgical groups, and there were no significant differences in bleeding, infection, or cardiopulmonary complications.

CONCLUSION: Jaw surgery accounted for a minority of sleep procedures over the eight-year study period, even though there was no significant difference in complication rates compared to pharyngeal surgery and there are data to suggest greater treatment efficacy. African American, Hispanic, and Asian patients, in addition to lower income patients and patients with Medicare had a significantly lower odds of receiving jaw surgery. Awareness of these disparities may help guide future initiatives to improve patients' surgical options for sleep apnea.

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