

Case Volume and Outcomes of Head and Neck Free Tissue Transfer Reconstruction Between Plastic Surgeons and Otolaryngologists

Anitesh Bajaj BS¹, Rushmin Khazanchi BA¹, Gabrielle C. Rodriguez MD¹, Parul Rai BS¹, Emily George MD¹, Kathryn R. Reisner BA¹, Arun K. Gosain MD¹

¹Division of Plastic Surgery, Ann & Robert H. Lurie Children’s Hospital, Northwestern University Feinberg School of Medicine, Chicago, IL

Background

Plastic surgeons are trained to operate from head-to-toe, with extensive experience in microsurgery, making them capable of performing a variety of procedures. It is crucial to understand if patient outcomes differ for head and neck reconstructions performed by plastic surgery or otolaryngology, both for optimizing patient outcomes and assessing the competence of each specialty in performing the procedure.

Research Objectives

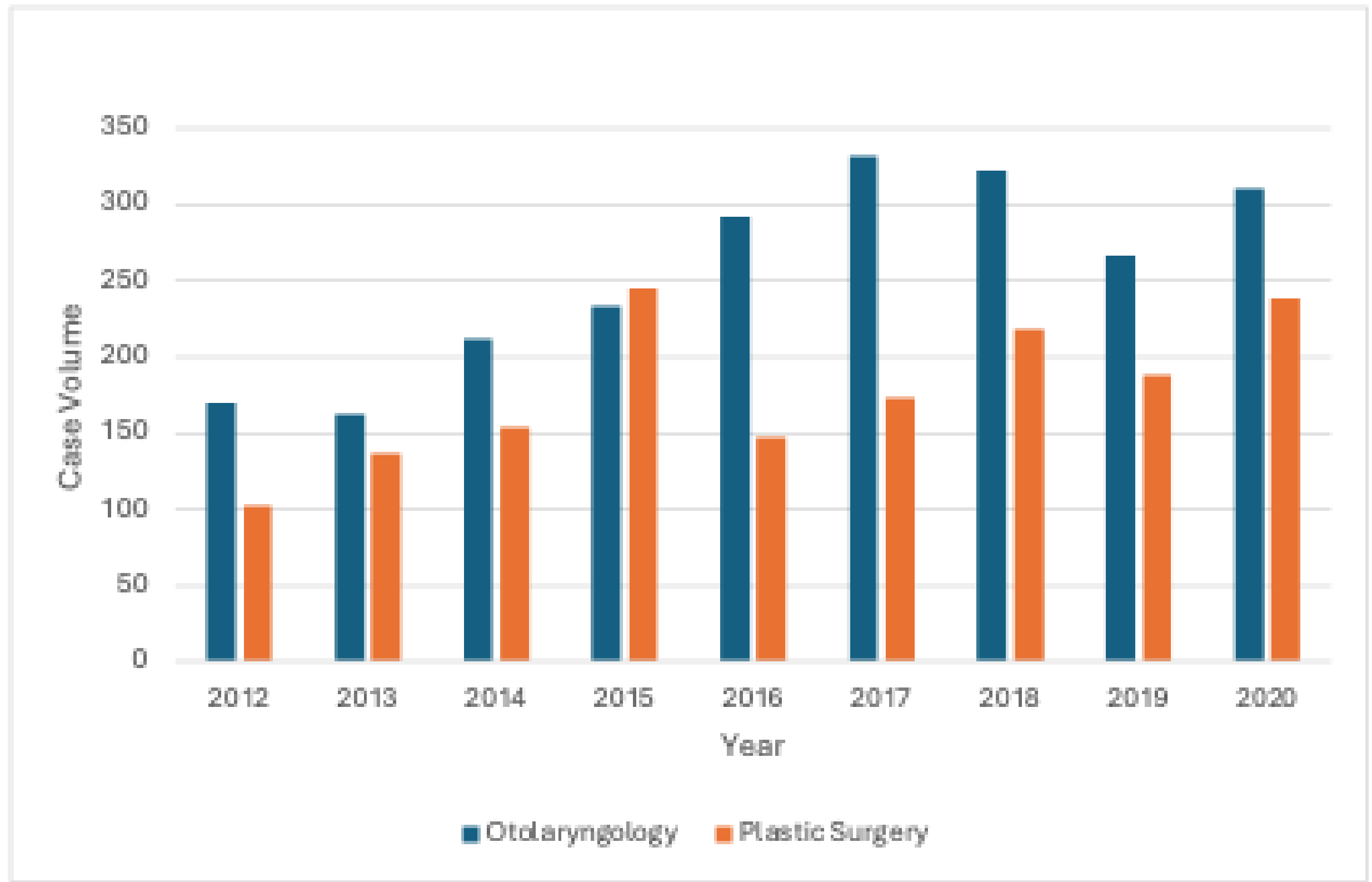
This study aims to analyze free tissue transfer (FTT) reconstruction following head and neck neoplasm resection and assess case volumes and clinical endpoints by surgeon specialty to elucidate the evolving landscape of head and neck reconstruction.

Methods

The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database was queried from 2012-2020 using Current Procedural Terminology and International Classification of Diseases codes specific for free tissue transfers in the setting of head and neck neoplasms. Primary 30-day outcomes of interest included: wound complications, medical complications, postoperative length of stay, non-home discharge, and return to operating room.

Case volumes between plastic surgeons and otolaryngologists were compared. Bivariate statistics were performed to compare patient characteristics and outcomes between plastic surgeons and otolaryngologists during the study period. Multivariate logistic regression models adjusting for patient-specific covariates were constructed to assess whether surgeon specialty was an independent predictor of outcomes. Significance was set at $p < 0.05$ and a Bonferroni correction was applied to adjust for multiple hypothesis testing ($n=49$).

Figure 1. Case Volumes by Specialty: 2012-2020



Results

Overall, 3903 free tissue transfers were included (plastic surgeons: 1603, otolaryngologists: 2300) (Figure 1). Reconstructions performed by plastic surgeons had increased operative time (583 minutes vs 528, $p < 0.001$) and were more likely osseous tissue transfers ($p < 0.001$).

Multivariate analysis revealed increased postoperative length of stay (1.2 days) in reconstructions performed by plastic surgeons ($p = 0.002$). Osseous tissue transfers had significantly increased operative time and length of stay when compared to soft-tissue transfers ($p < 0.001$). Surgical specialty was not a predictor of any other measured postoperative outcome on multivariate analysis ($p > 0.05$).

Table 1. Multivariate Logistic Regression Results

Outcome Variable	Surgeon Specialty: Plastic Surgery*	
	Adjusted OR (95% CI)	P-value†
Return to the Operating Room	0.928 (0.783, 1.101)	0.394
Any Wound Complication	1.157 (0.967, 1.384)	0.110
Any Medical Complication	1.028 (0.889, 1.188)	0.711
Non-Home Discharge	1.003 (0.829, 1.213)	0.977

*Otolaryngology was treated as the reference level

†Bonferroni corrected p-value

Abbreviations: Confidence Interval (CI), Odds Ratio (OR)

Conclusions

Outcomes between plastic surgeons and otolaryngologists are similar in the setting of head and neck free tissue transfer reconstructions before and after accounting for patient-specific features.

Given this lack of difference, our study supports the notion that either surgical specialty can effectively perform these reconstructions and that plastic surgeons should make efforts to maintain their relative case volumes, especially in high-complexity cases.