

An Analysis of Race and Ethnicity and Complications After Tonsillectomy

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Introduction

- Tonsillectomies are one of the most commonly performed ambulatory procedures in otolaryngology
- Indications for adult tonsillectomy: chronic tonsillitis, obstructive sleep apnea, tumor, and recurrent peritonsillar abscess.
- Tonsillectomy has low mortality and yet ~20% of patients will experience a complication
 - Most common complications include postoperative hemorrhage and dehydration.
- Race has been shown to have varying significance on post-operative complications.
- Previous studies have shown increased prevalence of thyroid surgery complications in those of non-Caucasian race.
- This study aims to investigate if race is associated with complications following adult tonsillectomy.

Methods

- A retrospective study was conducted using the 2017-2019 NSQIP data set from the ACS.
- Cases were accrued based on CPT code 42826 “Excision and Destruction Procedures on the Pharynx, Adenoids, and Tonsils.”
- Data collected included patient demographics, comorbidities, inpatient status, perioperative descriptors, and complications.
- Data enumeration and analysis were performed using SPSS version 28 software (IBM Corp. in Armonk, NY 2021).
- Outcomes compared between Black or African American and Caucasian. Nearest propensity score matching performed to compare second group.

Results

- 8,521 patients underwent tonsillectomies, 6,502 of the patients reported their race

Table 1: Demographics

| Race | N |
|-------------------------------------|------|
| White | 5173 |
| Black/African American | 898 |
| Asian | 347 |
| Native Hawaiian or Pacific Islander | 57 |
| American Indian or Alaska Native | 27 |
| Unknown/ Not Reported | 2019 |

Table 2: Comparing Caucasian vs. Black or African American

| | Unmatched | | | Matched | | |
|-------------------------------------|-----------|---------------------------|---------|---------|---------------------------|---------|
| | White | Black or African American | p-value | White | Black or African American | p-value |
| Preoperative Characteristics | | | | | | |
| Sex | 1942 | 285 | <.001 | 234 | 285 | .995 |
| Ethnicity | 541 | 18 | <.001 | 18 | 18 | .971 |
| Age (years) | 30.35 | 30.90 | .003 | 30.91 | 30.90 | .252 |
| BMI | 29.03 | 31.63 | <.001 | 31.72 | 31.63 | .549 |
| Comorbidities | | | | | | |
| Diabetes | | | .002 | | | .877 |
| Insulin | 42 | 12 | | 12 | 12 | |
| Non-Insulin | 145 | 43 | | 34 | 43 | |
| HTN w/ Meds | 441 | 152 | <.001 | 122 | 152 | .894 |
| Inpatient | 260 | 69 | .001 | 51 | 69 | .556 |
| Operation Time (mins) | 28.71 | 29.42 | .004 | 29.41 | 29.42 | .124 |
| Primary Outcome | | | | | | |
| LOS (days) | 0.157 | 0.233 | .003 | 0.18 | 0.233 | .980 |
| Reoperation | 219 | 26 | .060 | 36 | 26 | .036 |
| Readmission | 131 | 21 | .731 | 23 | 21 | .331 |

Table 3: Regression

| Regression Type | Odds Ratio | 95% CI | p-value |
|------------------------------|------------|----------------|---------|
| Readmission | | | |
| Race | 0.527 | 0.290-0.956 | .035 |
| Age | 0.950 | 0.918-0.982 | .002 |
| Diabetes | 5.140 | 1.34-23.289 | .034 |
| Hypertension | 2.935 | 1.175-7.332 | .021 |
| Steroid Use | 9.140 | 2.706-30.877 | <.001 |
| Bleeding Disorder | 64.388 | 12.914-321.026 | <.001 |
| Length of Stay (LOS) | | | |
| Race | 0.005 | -0.260-0.323 | .189 |
| Current smoker within 1 year | -0.620 | -1.081-1.159 | .008 |
| Functional Status | 3.589 | 0.992-6.186 | .007 |
| Sepsis | 2.255 | 1.309-3.202 | <.001 |

Discussion

- Black or Africans Americans were more likely to have increased length of stay (LOS)
 - LOS regression analysis revealed that race was not a significant factor.
- Caucasians were significantly more likely to return to the OR.
 - Readmission regression analysis revealed race, age, comorbidities, and bleeding to be associated with readmission.

Conclusion

For patients included in the NSQIP database, race does not appear to significantly impact the incidence of complications for those who underwent tonsillectomy except for return to OR. More work is needed to clarify the reasons for this.

References

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