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Introduction

Readmission and reoperation are significant risks in the resection of vestibular schwannoma (VS). This report analyzes the impact of patient-level and surgical factors to predict these adverse outcomes

Methods

A retrospective cohort design of patients diagnosed with benign cranial nerve neoplasm enrolled in the ACS-NSQIP registry from 2007-2013 was utilized. The primary outcomes were readmission and reoperation within 30 days. Multivariate logistic regression analysis was utilized.

Results

A total of 575 patients were included in this analysis. Operative approaches included retrosigmoid (57%), transtemporal (41%), and transcochlear (2%), and neurosurgeons were more likely to employ the retrosigmoid approach and less likely to employ the transtemporal and transcochlear approaches than otolaryngologists. Operative microscopes were used in 42% of cases. Readmission within 30 days was required for 11% of patients at a median of 14 days post-operatively (IQR: 8-22), and reoperation within 30 days was indicated for 8% at 10 days post-operatively (IQR: 6-21). Less prevalent major complications included death (0.2%), myocardial infarction (0.2%), and venous thromboembolism (1.7%).

Readmission occurred to manage CSF leak (32%), other surgical CNS complications (25%), infection (21%), new neurologic symptoms (11%), and hydrocephalus (7%) amongst others. Reoperation was indicated for repair of post-operative intracranial defects (41%) and middle ear defects (22%) amongst other reasons. Multinomial logistic regression analysis was conducted to determine independent predictors of readmission and reoperation. Age, transtemporal approach, and pre-operative steroid usage predicted readmission, while sex, BMI, ASA status, operative time, and operative microscopy did not. None of these variables predicted reoperation. Interestingly, the transtemporal approach was also associated with increased operative time than the retrosigmoid approach (X2: p=0.002).

Conclusions

Readmissions following resection of vestibular schwannoma are associated with age, surgical approach, and usage of steroids.

Learning Objectives

By the end of this session, participants should be able to:

1) Quantify rates of adverse outcomes following resection of vestibular schwannoma

2) Describe the most frequent reasons for readmission and reoperation at 30-days post-operatively

3) Discuss the independent predictors of readmission after resection

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