

Neurofibromatosis and Acoustic Neuroma Resection: A Nationwide Inpatient Sample Analysis Hormuzdiyar H. Dasenbrock MD; Wenya Linda Bi MD PhD; Donnovan Guitierres; Ossama Al-Mefty MD; Ian F. Dunn MD Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA



Introduction

Acoustic neuromas in patients with neurofibromatosis type 2 (NF2) may be associated with a higher operative risk than sporadic tumors. We sought to investigate the association of NF2 and acoustic neuroma resection outcome across the American population.

Methods

- Patients with a primary procedure code of an acoustic neuroma resection in the Nationwide Inpatient Sample (2002-2011) were included and stratified based on the presence of NF2.
- The association of NF2 with facial nerve dysfunction, hearing loss, in -hospital mortality, neurologic complications, non-neurological medical complications, and length of stay was evaluated by multivariate logistic regression.
- Covariates included age, gender, admission year, admission type, comorbidities, expected primary payer, cerebral edema, and prior stereotactic radiosurgery.



Results

- Patients with NF2 were younger (p < 0.001) and had fewer comorbidities (p < 0.001) compared to those without neurofibromatosis.
- Rates of in-hospital mortality did not differ between patients based on NF2 status (p = 0.67).



Acoustic neuroma patients with NF2 are associated with greater risk of nonneurologic complications (OR 2.59, p < 0.001)



Acoustic neuroma patients with NF2 are associated with greater risk of neurologic complications (OR 1.6, p = 0.03)



Acoustic neuroma patients with NF2 are associated with greater risk of facial nerve dysfunction (OR 1.59, p = 0.01)



Acoustic neuroma patients with NF2 are associated with greater risk of hearing loss (OR 1.59, p = 0.04)



Acoustic neuroma patients with NF2 are associated with greater risk of lower cranial nerve dysfunction (OR 3.30, p < 0.001)

Conclusions

In this nationwide analysis, NF2 patients undergoing acoustic neuroma resection:

- were younger and had fewer comorbidities, but
- harbored higher rates of facial nerve dysfunction, hearing loss, lower cranial nerve dysfunction, medical complications, neurologic complications, and had longer hospital stay,

compared to sporadic cases.

Limitations

NIS database does not specify:

- tumor size,
- if cranial nerve dysfunction was present pre-operatively,
- if bilateral tumors were present.

References

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