

## Surgery

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### Introduction

Data on patient outcomes after surgery for neurofibromatosis have been derived from single-institution series. The objective of this study is to report inpatient complications, mortality and outcomes on a national level. This the first study to evaluate variables that may explain differences in the outcomes of NF-1 vs. NF-2 after neurological surgery.

### Methods

The National Inpatient Sample (NIS) was used to identify 3887 admissions for neurofibromatosis neurological surgery in the United States from 1998 to 2007. The effects of patient and hospital characteristics on inpatient outcomes were analyzed using logistic regression.

### Results

In-hospital mortality rate was 0.37%. Non-routine discharge rate was 23.1%. Patients with NF-1 (mean age: 23.2 years, range 1-83) were in the hospital longer (mean: 7.9 days) and had 63% more spinal tumor surgery than brain tumor surgery. Patients with NF-2 (mean age: 31.3 years, range 7-76) were in the hospital less time (mean: 6.3 days) and had more brain tumor surgery than spinal tumor surgery. Malignant tumor pathology was evident in 30.5% of brain tumors and 14% of spine tumors in NF-1 patients and in 0% and 20% in NF-2 patient tumors. Patients with NF-1 incurred over \$13,000 in additional hospital charges compared to NF-2 patients. Data showed that only the NF-2 patients had inpatient mortality (N=10). Neurological complications (1.3% in NF-1;12.4% in NF-2), pulmonary complications (3.8% in NF-1;2.7% in NF-2) and postoperative hemorrhages or hematomas (1.6% in NF-1; 2.9% in NF-2) were the most common complications reported.

### Conclusions

This national study on inpatient outcomes after surgery for neurofibromatosis highlights a new finding: patients with both NF-1 and NF-2 have a significant potential for malignant spinal cord tumors. Awareness of the potential malignant pathologies for

