The Need For Urgent Neurosurgical Procedures in Oncologic Patients Worsens Clinical Outcomes

Disclosure

The authors have no disclosures to report.

I acknowledge my continuing obligation to disclose to AANS/NREF/NPA, promptly and in writing, any change in my circumstances. I further acknowledge that if there is any case where my private interest conflict with the interests of AANS/NREF/NPA, I will indicate that I may have a conflict and abstain from any vote, speaking engagement, planning related to that issue.
Management of oncologic patients with urgent neurosurgical conditions is a great challenge because of treatment-related morbidity and the uncertain benefits of surgery itself. We sought to evaluate the mortality of urgent neurosurgery for cancer patients.
We retrospectively reviewed all patients submitted to urgent, non-oncological neurosurgeries at ICESP, University of Sao Paulo - reference cancer center for over 21 million inhabitants, from 2009-2018. Brain tumor surgeries, spine surgeries, and early postoperative complications were excluded. We used as a control group 144 non-urgent functional and debridement neurosurgeries for cancer patients. Primary endpoints were one-year survival and mortality (meaning postoperative mortality in the index hospitalization).
Results

276 urgent neurosurgeries were performed in 10 years. Mean patient age was 54±17.4 years, 51.8% male, and 51.4% metastatic. Age, gender, primary site, and metastasis were not different from control groups (p>0.05). Overall mortality was 33.7%, and one-year survival was 31.3%. Most conditions requiring immediate surgical procedure were related to Ventricular Shunts (n=163;59.1%) or Intracranial Hematoma Evacuations (n=113;40.9%). Regarding the oncologic diagnosis, patients were divided in Primary CNS tumors (35.1%) and other malignancies (64.9%). 78.2% of patients (n=140) presented with metastatic disease; of which, 70.7% (n=99) presented CNS lesions.
Results

One-year survival rate was higher in patients with CNS tumors (52.3% vs. 20.5%; p<0.001). Mortality was higher in other malignancies (43.2% vs. 16.5%; p<0.001). In age-adjusted univariate analysis, urgent neurosurgery predicted higher mortality (OR 3.2; 95% CI 1.9-5.6).
Results

In age-adjusted multivariate analysis, higher mortality was associated with urgent surgery (OR 3.2; 95%CI 1.8-5.6) and with other malignancies (OR 3.6, 95%CI 1.6-8.2).
Conclusions and Summary Points

• The need for urgent, unplanned neurosurgery in oncologic patients seems to decrease one-year survival and increase post-operative mortality.

• Patients with primary CNS tumors presented better prognosis, while other malignancies had a worse prognosis.