

Assessment of the Impact of Comorbidities on Perioperative Complications in Pediatric Neurosurgery

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Introduction

Recent governmental attempts to control health care costs have focused on reducing the incidence of complications, hospital-acquired conditions (HACs), and other provider preventable conditions (PPCs). One approach uses reduction or elimination of payments for complications, HACs, and PPCs; however, this method assumes all complications, HACs, and PPCs to be the same with payment restrictions applied uniformly. Patient-related factors, such as pre-existing comorbidities, likely influence perioperative complication incidence.

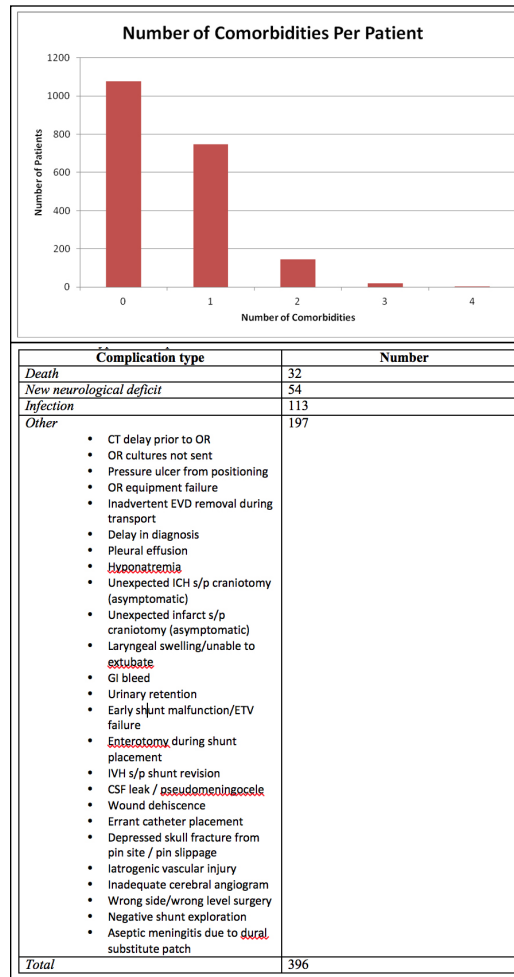
Methods

We conducted a retrospective assessment of prospectively collected morbidity and mortality events at a large pediatric neurosurgical unit over 5-years. We examined the impact of specific comorbidities and the cumulative effect of multiple comorbidities on complication incidence.

Results

1990 patients underwent 3195 procedures at our tertiary care facility during the 5-year study period. 298 (15.0%) patients experienced at least one complication. At least one comorbidity was present in 45.9% of patients. Renal comorbidity was significantly associated with the development of a complication ($p = 0.02$), and it was specifically associated with wound-related complications ($p = 0.006$). Neurological comorbidities had an association with complications ($p = 0.05$), and they were specifically associated with the complication of death ($p = 0.037$). An increased number of comorbidities, or patients with multiple comorbidities, did not correlate with an increased risk of complication.

There was also a general association between the type of surgery a patient underwent and the incidence of complications ($p < 0.0001$).



Conclusions

Incidence of perioperative complications in pediatric neurosurgery is influenced by pre-existing comorbidities.

- Renal: infections

- Neurologic: post-operative mortality

A larger, prospective study is required to further define this relationship

Learning Objectives

Study the relationship between patient-related factors, such as pre-existing comorbidities, and the incidence of perioperative complication in pediatric neurosurgery