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The Impact of Body Habitus on the Outcomes after Aneurismal Subarachnoid Hemorrhage

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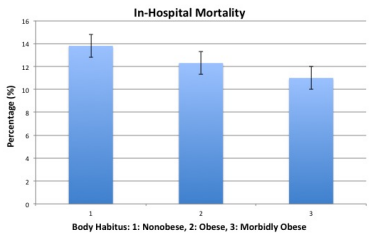
Introduction

The prevalence of obesity is rapidly increasing internationally. However, recent studies have suggested obesity may be protective for those with aneurismal subarachnoid hemorrhage. This is the first national study to evaluate the impact of body habitus on the outcomes of patients with aneurismal subarachnoid hemorrhage who undergo aneurysm repair.

Figure 1



Methods

Data from the Nationwide Inpatient Sample (2002-2010) were retrospectively extracted. Patients were included who had a diagnosis of subarachnoid hemorrhage or intracranial hemorrhage and underwent procedural aneurysm repair. Multivariate logistic regression analyses were performed to calculate the adjusted odds of in-hospital mortality and a non-routine hospital discharge for obese patients (with a body mass index between 30.0 kg/m2 and 40.0 kg/m2) and morbidly obese patients (with a body mass index greater than 40.0 kg/m2) compared to non-obese patients. Secondary outcomes that were also assessed included total complication rate, length of hospital stay, discharge dispositoin, and the odds of undergoing tracheostomy, gastrostomy, or ventricular shunting. All analyses were adjusted for differences in patient age, gender, co-morbidities, expected primary payer, treatment modality, ventriculostomy, mechanical ventilation, intraparynchemal hemorrhage, as well as hospital bed size and teaching status. Additional subgroup analyses were performed exclusively evaluating those who underwent microsurgical clipping or endovascular coil embolization.

Results

17,179 hospital admissions were examined. 3.1% of patients had a diagnosis code for obesity and 1.6% for morbid obesity. Baseline characteristics were compared: patient age, year of hospital admission, and number of comorbidities varied significantly by body habitus. Morbidly obese patients were significantly less likely to be treated with microsurgical clipping (55.8% for nonobese; 54.0% for obese; and 46.3% for mobidly obese, p=0.006). Neither obese (OR: 0.82, 95% CI: 0.59, 1.13) nor morbidly obese (OR: 0.84, 95% CI: 0.56, 1.27) patients had significantly different adjusted odds of in-hospital death, compared to non-obese patients. Additionally, complication rates, length of hospital stay, and the likelihood of undergoing tracheostomy, gastrostomy, or ventricular shunting did not vary based on body habitus. Morbidly obese patients (OR: 1.46, 95% CI: 1.08, 1.97), but not obese patients, had an increased adjusted odds of non-routine hospital discharge. Subgroup analyses evaluating patients treated with microsurgical clipping or endovascular coiling separately did not find differential outcomes by body habitus for those in either treatment modality.

Conclusions

In this nationwide study evaluating patients with subarachnoid hemorrhage, morbidly obese patients were found to have higher rates of nonroutine hospital discharge, but no differences in in-hospital mortality was seen by body habitus.

References

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