

Introduction

Studies have reported recent increased morbidity in complex pituitary surgeries. Understanding the impact of hospital characteristics (location, volume, teaching status) on these charges may improve efficient delivery of care.

Methods

Records of patients who underwent transsphenoidal pituitary surgery between 1995 and 2015 were obtained from the New York State Statewide Planning and Research Cooperative System Database. Patient and hospital characteristics were obtained. Classification of a hospital as a high (76-100th percentile), medium (26-75th percentile), or low volume (0-25th percentile) center was determined by the annual number of procedures. The primary outcome was the total Consumer Price Index adjusted hospital charge for the index admission. The Kruskal-Wallis test was used to compare continuous variables. Univariate and multivariate linear regression, with adjustment for patient and other hospital features were used to assess the effect of volume, teaching, status, and location on charges.

Results

9,950 patients underwent transsphenoidal pituitary surgery. High, medium, and low volume centers treated 71.6%, 24.1%, and 4.4% of cases, respectively. Median charges for high, medium, and low volume centers were \$31,534, \$37,203, and \$35,636, respectively ($p < 0.001$). Univariate analysis demonstrated that hospitals in New York City were associated with greater charges (+6.9%, [3.9,10.0], $p < 0.001$). High volume (-12.4%, [-20.0,-5.3], $p < 0.001$) and teaching (-24.8%, [-34.9,-14.7], $p < 0.001$) were associated with lower charges. In the multivariate analysis, the associated of charges with teaching status (-15.3%, [-22.5,-8.1], $p < 0.001$) and New York City (+15.0%, [12.7,17.4], $p < 0.001$) location persisted. After adjustments, high (+22.5%, [17.4,27.5], $p < 0.001$) and medium volume (+6.9%, [1.7,12.0], $p = 0.009$) hospitals were predictors of higher charges.

Conclusions

A majority of patients underwent transsphenoidal pituitary surgery at high volume hospitals. The teaching status and geographic location of the hospital had a significant impact on charges. While high volume hospitals had the lowest median charges associated with the surgical admission, they were associated with increased charges after adjustment for patient characteristics can greatly affect charges.

Learning Objectives

Understand the impact of hospital characteristics on patient charges.

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