



Morbidity and Mortality Associated with Transoral Approaches to the Cervical Spine

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Introduction

Anterior approaches to the cervical spine can be an elegant and practical way to address anterior pathology. The transoral approach provides a direct access to C1, C2, and less commonly C3 without manipulation of critical structures, however, due to its rarity and unfamiliar anatomy, significant morbidity and mortality exist.

Methods

Adult patients undergoing transoral approaches to the spine from 2008-2012 were identified by the Current Procedural Terminology (CPT) codes in the ACS NSQIP database. Univariate and multivariate analyses were performed to assess morbidity and mortality associated with the procedure.

Results

126 patients undergoing cervical spine surgery via transoral approach were identified, of which 27 patients (21.43%) had a postoperative complication, and three patients died (2.38%). Six (4.76%) had a pulmonary complication, two (1.59%) had a venous thromboembolism, two (1.59%) had a urinary tract infection, three (2.38%) had sepsis, and three (2.38%) had a wound complication. 20 patients required an intraoperative or postoperative blood transfusion (15.87%). Eight patients (6.35%) returned to the operating room. Patients with operative time greater than four hours had a complication rate of 29.63%, compared to 7.07% in patients with operative time less than four hours (p=0.001). Patients with length of stay greater than five days had a complication rate of 55.56%, compared to 16.16% in patients with length of stay less than five days (p<0.0001). On multivariate analysis, there was an increased risk of complications with operative time greater than four hours (OR 7.794, 95% CI 1.835-33.1, p=0.0054) and total length of stay greater than five days (OR 7.461, 95% CI 2.377-23.42, p=0.0006).

Conclusions

Transoral approaches to the anterior cervical spine carry significant risks of morbidity and mortality. Maintaining operative time below four hours and length of stay less than five days may decrease morbidity and mortality.

Learning Objectives

The aim of this study was to analyze morbidity and mortality in patients undergoing transoral approaches to the cervical spine using a large national database.