ABSTRACT

Background: Unplanned readmission within 30 days is an important outcome measure after surgery. In this analysis, we use the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database to analyze the 30-day readmission and outcomes in patients who underwent parotidectomy.

Methods: Retrospective study of cases from the NSQIP database.

Results: We identified 3,533 patients who had a parotidectomy performed between 2011 and 2013, with a 30-day readmission of 2.1%. Overall, 54.5% of patients had a partial parotidectomy with preservation of the facial nerve, 43.0% had a postoperative diagnosis of benign salivary gland neoplasm, and 55.8% were readmitted in the outpatient setting. Patients who were readmitted were more likely to be 61-80 years of age (56.8% vs. 41.7%, P = 0.009) and male (64.9% vs. 52.9%, P = 0.042). Medical comorbidities significantly associated with unplanned readmission included weight loss, hypertension, diabetes mellitus, disseminated cancer, open wound/wound infection, steroid use, functional status, and ASA classification. A multivariate analysis of postoperative variables revealed that both medical (OR = 18.485; CI = 9.851-34.687; p < 0.001) and surgical complications (OR = 3.784; CI = 2.000-7.160; p < 0.001) were significantly associated with an increased odds of readmission.

Conclusion: Unplanned readmission rate for parotidectomy is 2.1%. Preoperative variables significantly associated with readmission include hypertension, open wound/wound infection, and chronic steroid use. Postoperative surgical and medical complications are associated with a significantly increased odds of readmission.

INTRODUCTION

Parotidectomy is a commonly performed surgical procedure with a broad range of indications including primary benign and malignant disease, metastatic disease, and non-neoplastic, inflammatory and autoimmune conditions. The National Surgical Quality Improvement Program (NSQIP) sponsored by the American College of Surgeons is a national database created to improve the quality of care for surgical patients. To date, analyses of outcomes after parotidectomy are single-institution studies, and often do not report on readmission rates. Here, we used the NSQIP database to analyze the incidence and determine predictors of 30-day unplanned readmission after parotidectomy in the largest cohort to date.

MATERIALS & METHODS

The 2011–2013 NSQIP participant use files were accessed to perform a retrospective analysis. The NSQIP database provides information on patient demographics, comorbidities, preoperative laboratory values, length of stay, operative time, and 30-day postoperative outcomes including readmission rates. The NSQIP database was accessed in June 2015 to identify patients who underwent parotidectomy between 2011 and 2013 using the Current Procedural Terminology (CPT) codes outline in Table 1.

All statistical analyses were performed using SPSS version 22 (IBM, Armonk, NY). Independent 2 tailed t test, cross-tabulation, Pearson’s chi-square, or Fisher’s exact tests were used to analyze associations between variables where appropriate. Probability values (p-value) < 0.05 were considered statistically significant.

Table 1. Type of Parotidectomy

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11202</td>
<td>Total parotidectomy</td>
<td>56.7</td>
</tr>
<tr>
<td>11203</td>
<td>Partial parotidectomy with facial nerve preservation</td>
<td>43.0</td>
</tr>
</tbody>
</table>

DISCUSSION

Readmissions to the hospital is a critical marker of healthcare quality. In general, parotidectomy has a low rate of 30-day readmission rate (2.1%), similar to other otolaryngologic procedures. Readmission was shown to be associated with total parotidectomy with facial nerve sacrifice, often performed in the case of malignant tumors. This cohort likely represents patients with more complex and advanced disease who are at risk for postoperative complications.

Of those patients readmitted, they were significantly more likely to have had their parotidectomy performed in the inpatient setting. Hyponatremia, hyponatremia, and anemia were shown to be associated with readmission.

Comorbid conditions were analyzed between the two cohorts and chronic steroid use, open wound/wound infection, and hypertension remained significantly associated with readmission on multivariate regression analysis.

Readmitted patients were found to have significantly longer total operative times, length of stay, and returned to the operating room more frequently. Regression analysis of postoperative outcomes showed both medical and surgical complications were significantly associated with increased odds of readmission.