The Impact of Bleeding Disorders on 30-day Outcomes among Patients Undergoing Cervical Corpectomy Procedures: Analysis from a National Surgical Quality Registry

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Disclosures

Nothing to disclose
Introduction

• Patients with coagulopathies undergoing a surgical procedure have been shown to have poorer postoperative outcomes

• There is a paucity in the literature evaluating such patients undergoing cervical corpectomies

• Objective: To evaluate the 30-day outcomes of patients undergoing cervical corpectomy procedures
Methods

• National Surgical Quality Improvement Program (NSQIP) was queried for patients undergoing cervical corpectomy between 2007-2017

• 3:1 propensity scoring was utilized to match patients with coagulopathies with those without

• Multivariable conditional logistic regression was used to identify the association between coagulopathies and length of stay, operative time, 30-day readmissions, 30-day complications, 30-day reoperations, and blood transfusion occurrences
# Results

Predictors of peri- and postoperative outcomes following cervical corpectomy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Operative Time</th>
<th>Length of Stay</th>
<th>30-day Readmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (95% CI)</td>
<td>P-Value</td>
<td>Coef. (95% CI)</td>
</tr>
<tr>
<td>Bleeding Disorder</td>
<td>26.6 (24.4-50.8)</td>
<td>0.031</td>
<td>2.14 (0.87-3.41)</td>
</tr>
<tr>
<td>Male (vs. female)</td>
<td>(not sig. in univariate)</td>
<td></td>
<td>(not sig. in univariate)</td>
</tr>
<tr>
<td>Age</td>
<td>(not sig. in univariate)</td>
<td></td>
<td>(not sig. in univariate)</td>
</tr>
</tbody>
</table>

### Diabetes

- No (base)
- Insulin (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Non-Insulin (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Smoker (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)

### Functional Status

- Independent (base)
- Partially dependent (not sig. in univariate) 3.79 (2.48-5.10) <0.001 1.47 (0.009-0.68) 0.01
- Totally dependent (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Ventilator dependent -123.6 (-199.4 to -47.8) 0.002 (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- History of Severe COPD (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- History of CHF (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Ascites (not sig. in univariate) (not sig. in univariate) NA
- Disseminated Cancer -40.3 (-85.2 to 4.6) 0.078 (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Steroid use for Chronic Condition (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Dialysis -36.0 (-84.2 to 12.2) 0.143 (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Pre-op Transfusion (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)

### 30-day Complications

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding Disorder</td>
<td>1.02 (-0.06-0.98)</td>
<td>0.662</td>
</tr>
<tr>
<td>Male (vs. female)</td>
<td>(not sig. in univariate)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>(not sig. in univariate)</td>
<td></td>
</tr>
</tbody>
</table>

### 30-day Reoperations

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding Disorder</td>
<td>0.99 (-0.16-1.59)</td>
<td>0.977</td>
</tr>
<tr>
<td>Male (vs. female)</td>
<td>(not sig. in univariate)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>(not sig. in univariate)</td>
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</tbody>
</table>

### Bleeding Transfusions

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding Disorder</td>
<td>1.05 (0.004-0.093)</td>
<td>0.003</td>
</tr>
<tr>
<td>Male (vs. female)</td>
<td>(not sig. in univariate)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>(not sig. in univariate)</td>
<td></td>
</tr>
</tbody>
</table>

### Functional Status

- Independent (base)
- Partially dependent 1.17 (0.064-0.25) 0.001 (not sig. in univariate) 0.92 (-0.137-0.053) 0.001
- Totally dependent (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Ventilator dependent (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- History of Severe COPD (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- History of CHF 1.08 (-0.14 to 0.30) 0.497 (not sig. in univariate) 0.91 (-0.215-0.226) 0.111
- Hypertension requiring medication (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Disseminated Cancer 0.944 (-1.5-0.34) 0.216 (not sig. in univariate) (not sig. in univariate)
- Steroid use for Chronic Condition (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
- Dialysis 0.76 (-0.45 to 0.110) 0.001 (not sig. in univariate) 0.92 (-0.17-0.004) 0.622
- Pre-op Transfusion (not sig. in univariate) (not sig. in univariate) (not sig. in univariate)
Discussion

- The presence of a coagulopathy was associated with increased operative time, increased length of stay, and increased odds of blood transfusion.

- Coagulopathies can be used to risk-stratify patients undergoing cervical corpectomies.
Summary Points

• Coagulopathies are significantly associated with adverse per– and post-operative outcomes for patients undergoing cervical corpectomy procedures
Questions and discussion