Impact of trunk flap closure following spinal surgeries in an oncology population

Price M¹, Howell E¹, Mehta V¹, Tillis R², Ramirez L¹, Bukenya G¹, Goodwin J¹, Park C¹, Abd-el-Barr M¹, Karikari I¹, Brown D², Goodwin CR¹

¹Duke University Department of Neurosurgery; Duke University Medical Center; Durham, NC; ²Duke University Department of Plastic Surgery, Duke University; Durham, NC

Introduction
- Surgical closure of complex spinal procedures presents a challenge due to potential for poor wound healing and infections¹,²,³.
- This risk is increased in oncology patient populations who have increased risk of wound disruption and poor healing.
- Paraspinal flaps can decrease the likelihood of postoperative complications.
- We sought to determine whether trunk flap closure impacted postoperative outcomes in patients with disseminated cancer.

Methods
- National Surgical Quality Improvement Program (NSQIP) database was queried for all patients undergoing spinal surgeries from 2005-2017.
- Variables included demographics, disseminated cancer status, comorbidities, operative time, and wound classification.
- Post-operative variables included surgical site infection (SSI), wound disruption, and complication rates.
- Univariate and multivariate analyses were performed to delineate risk factors impacting outcomes in the context of disseminated cancer.

Results
- Of patients with disseminated cancer at the time of surgery, 17 patients received a trunk flap versus 478 patients who did not.
- There was no significant difference between SSI between the two groups.
- This includes all types of SSI: overall, superficial incisional, deep incisional, organ/space.

<table>
<thead>
<tr>
<th>Procedure Performed</th>
<th>No Trunk Flap N = 478</th>
<th>Trunk Flap N = 17</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Site Infection (SSI)</td>
<td>17 (3.54%)</td>
<td>1 (5.88%)</td>
<td>0.47</td>
</tr>
<tr>
<td>Superficial SSI</td>
<td>4 (0.84%)</td>
<td>0 (0%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Deep Incisional SSI</td>
<td>10 (2.09%)</td>
<td>0 (0%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Organ/ Space SSI</td>
<td>3 (2.09%)</td>
<td>1 (5.88%)</td>
<td>0.13</td>
</tr>
<tr>
<td>Wound Disruption</td>
<td>6 (1.26%)</td>
<td>0 (0%)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 1: Wound complication rates in oncology patients based on receipt of prophylactic paraspinal flap vs no flap closure

Conclusion
- Our results suggest that receiving a trunk flap does not significantly decrease the risk of post-operative complications in patients with disseminated cancer.
- Our small patient population may not have been robust enough to determine the true effect of prophylactic paraspinal flaps in this patient population.
- Future studies to further investigate this procedure in oncology patients are warranted.

References