**METHODS**

- To retrospectively review intraoperative neuromonitoring changes during the surgical treatment of Thoracic Outlet Syndrome (TOS) in an effort to reveal the nature, pattern and timing of neurologic injuries that may occur during these procedures.
- To describe the efficacy, sensitivity and specificity of neuromonitoring with respect to detection of postoperative neurologic injuries associated with these procedures.

**RESULTS**

<table>
<thead>
<tr>
<th>Number and Type of Alerts at Different Surgical Stages</th>
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<tbody>
<tr>
<td><strong>Exposure</strong></td>
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<tr>
<td>Burst/Brief EMG Train</td>
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</tbody>
</table>

**PURPOSE**

- Alerts occurred in 82 (67%) of the procedures.
- 169 isolated or concurrent “alert events” were noted.
- 97% of the alerts involved the brachial plexus followed by the phrenic nerve (2%).
- No long thoracic nerve or ulnar nerve SSEP alerts were noted.
- The overall rate of new deficits was 2.4%.

**CONCLUSION**

Multimodality neuromonitoring is an efficacious, sensitive and specific adjunct to supraclavicular surgical treatment of TOS.

Intraoperative neuromonitoring can prompt the surgeon to react immediately to early signs of evolving neurologic injury and thereby avoid or mitigate long-term neurologic deficits. Unresolved alerts primarily occur during or immediately after rib removal. Stimulated EMG is a good prognostic indicator of postoperative phrenic nerve function. The post op injury rate associated with this study group (2.4%) compares favorably with other studies which have documented injury rates as high as 37%.

**DISCLOSURES**

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- The primary author provides intraoperative neuromonitoring for both of the co-authors at Christiana Care Health System in Newark Delaware.