Totally tubular: Prospective management of patient access devices in the operating room
Disclosures

None
Acknowledgements

- Goodman Campbell Brain and Spine
- Indiana University
- Riley Hospital for Children
- Pediatric Neurosurgery Team
- My Patients
Syllabus

- Background
- Methods
- Results
- Conclusions
Background

- Patient access devices in the OR are not tracked.
- Unexpected discontinuation of devices causes problems
- Quality Improvement

- Morbidity
- Safety
- Value
Background

- Unplanned intraoperative extubations (UIE) are potentially catastrophic events.
- A previous retrospective study published by the authors demonstrated a single center large volume (14,400 cases) UIE event rate of 0.3% among pediatric neurosurgery cases compared with a main operating room (OR) event rate of 0.007% for non-neurosurgical cases.
- This discrepancy revealed system level problems with airway maintenance in pediatric neurosurgery cases specifically.
- Although UIE is a never event, the loss or dysfunction of any patient access device in the OR is antithetical to the quality and safety mission, increases complication rates, and represents opportunity for quality improvement.
Purpose

To determine the true incidence of unexpected loss of patient access devices in the operating room during pediatric neurological surgeries.
The Riley Hospital for Children Departments of Anesthesiology and Neurosurgery initiated a prospective identification process for all displaced or malfunctioning patient access devices.

Data from 161 pediatric neurosurgery cases at a single institution were recorded by OR nurses Monday to Friday from 730-1700 over a period of 104 days.
Table 1: Demographics, characteristics and outcomes of patient access devices.

<table>
<thead>
<tr>
<th>Age</th>
<th>Position</th>
<th>Procedure</th>
<th>Device Failure</th>
<th>Method of Detection</th>
<th>Steps to Rectify</th>
</tr>
</thead>
<tbody>
<tr>
<td>16mos</td>
<td>Prone</td>
<td>Complex cord untethering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*10mos</td>
<td>Sphynx</td>
<td>Posterior cranial reconstruction</td>
<td>Foley catheter disconnect fri</td>
<td>Leaking urine</td>
<td>Supination, remove&amp;replace</td>
</tr>
<tr>
<td>14yrs</td>
<td>Supine</td>
<td>C6 corpectomy, fusion</td>
<td>Foley catheter disconnect fri</td>
<td>Leaking urine</td>
<td>Remove&amp;replace</td>
</tr>
<tr>
<td>18yrs</td>
<td>Supine</td>
<td>Chiari decompression</td>
<td>PIV infiltration</td>
<td>Diminished pulse ox</td>
<td>Remove IV, warm limb</td>
</tr>
<tr>
<td>16mos</td>
<td>Prone</td>
<td>Chiari decompression</td>
<td>UIE</td>
<td>Supination</td>
<td>Bag mask until case end</td>
</tr>
</tbody>
</table>

* Occurred twice in same case; PIV peripheral intravenous device; UIE unintended intraoperative extubation

Five events were recorded for a case event rate of 3%, including one UIE, one infiltrated IV involving 36% of the arm, and three disconnected Foley catheters.
Checklist for re-establishing airway following UIE
Conclusions

- The true incidence of displaced or malfunctioning patient access devices in the operating room is not known, probably secondary to documentation omission.
- This interdisciplinary prospective data represents a Plan stage scheduled for 12 months of metric tracking.
- An ongoing Do-Study-Act phase aims to eliminate the unintentional loss or dysfunction of patient access devices.
References


