Does combining procedures into a single anesthetic improve outcomes?

Renata M. Miketic, M.D., Dimitry Tumin, Vidya T. Raman, M.D., Joseph D. Tobias, M.D.

Dept of Anesthesiology and Pain Medicine, Nationwide Children's Hospital, Columbus, OH, USA.

abstract

- Combination cases are always challenging
- Co-ordination of services and specialties is timing consuming
- Exposure to multiple anesthetics is a concern
- Cost burden associated with general anesthesia for multiple separated procedures is a potential negative aspect
- We propose that combining multiple procedures in a single anesthetic will decrease total cost associated while not significantly changing outcomes

methods

- IRB approval was obtained
- EMR was queried in a retrospective fashion
- Patients having single anesthetic encounter for 2 or more procedures with 2 or more services
- July 2015 to June 2016
- Case location: main operating room, radiology department and off site areas
- Case selection: any procedure by a surgical sub-specialty or a non-surgical service
- Admission status: ambulatory, outpatient in a bed or AM admission

<table>
<thead>
<tr>
<th>ASA Status</th>
<th># of Services</th>
<th># of Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA 1</td>
<td>92</td>
<td>82%</td>
</tr>
<tr>
<td>ASA 2</td>
<td>514</td>
<td>17%</td>
</tr>
<tr>
<td>ASA 3+</td>
<td>438</td>
<td>1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASA Status</th>
<th>Unanticipated Admission</th>
<th>NO Unanticipated Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>2</td>
<td>39%</td>
<td>50%</td>
</tr>
<tr>
<td>3</td>
<td>55%</td>
<td>41%</td>
</tr>
</tbody>
</table>

results

- 1120 patients
- Average age 5.5 ± 6 years
- ASA status: 92 ASA 1; 514 ASA 2; 438 ASA 3+; and 76 missing
- Services involved: 2 services - 922 cases (82%); 3 services - 185 cases (17%); 4 services - 13 cases (1%)
- Location: 1 location - 909 cases (81%); 2 locations - 210 cases (19%); 3 locations - 1 case (0.1%)
- Average anesthesia time: 127 ± 102 minutes
- Average PACU time: 64 ± 37 minutes
- Unanticipated admission rate 85/1,120 cases (7.6%)
- Five (6%) ASA 1, 33 (39%) ASA 2, and 47 (55%) ASA 3+; compared to 87 (9%), 481 (50%), and 391 (41%) the groups without unanticipated admission (p=0.032 by Chi square test)

discussion

- Unanticipated admission rate was high (7.6%)
- May be due to incorrect booking of medically fragile children or younger children
- Can be attributed to either an extended operative/procedure time (greater than 3 hours) or an extended PACU stay (greater than 1 hour)

references