Retrospective Analysis of Anesthetics for Cleft Lip and Palate Surgery in Infant
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Abstract

• Introduction. The surgical repair and anesthesia care of children with congenital facial malformations (non-union of the upper lip and cleft palate) are far from being resolved. Children with this pathology have a critical pathology, which increases risks during surgery and anesthesia. Correction of these defects in later childhood lead to facial deformities. Surgical treatment of cleft upper lip and cleft palate in infants is done under the Pavic-Thompson method. It is important for an adequate depth of anesthesia for these operations, additionally supplemented with local anesthesia, thereby permitting the procurement and maintenance of an appropriate airway after correction of the deformity.
• Materials and methods of findings. Results were followed of anesthetics in patients, who received general anesthesia for repair of cleft lip (group 1 which consisted of 263 patients) and for repair of cleft palate (group 2 which consisted of 278 patients) over the period of 6 years. ASA risk factors were level I-II. Duration of surgical repair typically ranged from 45 to 140 minutes. Premedication: atropine. Induction: sevoflurane 7 vol% or intravenous propofol 3 mg/kg, fentanyl 5 µg/kg, succinylcholine 2 mg/kg, pancuronium 0.05 mg/kg. All patients received additional infiltration local anesthesia (1% xylocain 0.4 mg/kg). Maintenance of anesthesia: propofol 6-9 mg/kg/hr. In the postoperative period all children were left in the ICU for 24 hours (it’s standard care in Ukraine), during which time they received intravenous fluid and antibiotic therapy, sedation, pain relievers, symptomatic treatment. Post-operative care included cardiac and lungs respirations monitoring, oxygen saturation, the appearance of nausea and vomiting, potential for oral self-feeding (p. o. intake).
• Results of observation. Hemodynamic reactions during propofol anesthesia were well tolerated. After extubation respiratory numbers in the 2 group were within acceptable norms. In the first postoperative 24 hour period, 20% of both group showed a low grade fever. Nausea and vomiting occurred in 25% of patients in 1 group and 20% of patient in 2 groups. 4.5 hours after surgery all patients were started on soft milk palubation. By the third postoperative hours patients of both groups were tolerating food well by mouth.
• Commentary of results. The anesthetic method used, propofol with local anesthesia supplementation is optimal for maxillofacial surgery for infants of breast feeding age. Most important in the success of this anaesthesia is easy recovery. Stable hemodynamics, minimal of postoperative nausea/vomiting and the possibility of early oral feeding.

Introduction

• The surgical repair and anesthesia care of patients with congenital facial malformations (non-union of the upper lip and cleft palate) are far from being resolved.
• Patients with such malformation often have critical pathology, which increases risks during surgery and anesthesia.
• Correction of these defects in later childhood lead to facial deformities. The adequate level of anesthesia (both general and local) is important for successful postoperative treatment of this pathology.

Materials and methods of findings

• Means and methods of general anesthesia for repair of cleft lip (group 1, comprised 263 patients) and cleft palate (group 2, comprised 278 patients) had been evaluated over 6 years period. ASA risk factors were levels I-II.
• Surgical repair usually took from 45 to 140 minutes.
• Premedication: atropine. Induction: sevoflurane 7 vol% or intravenous propofol 3 mg/kg, fentanyl 5 µg/kg, succinylcholine 2 mg/kg, pancuronium 0.05 mg/kg. All patients received additional infiltration local anesthesia (1% xylocain 0.4 mg/kg). Maintenance anesthesia: propofol 6-9 mg/kg/hr.
• All children received intravenous fluid and antibiotic therapy, sedation, pain relievers, symptomatic treatment in the postoperative period.
• Postoperative care included hemodynamic and respiration monitoring, oxygen saturation, nausea and vomiting control, aid in oral self-feeding (p. o. intake).

Results of observation

• Hemodynamic reactions during propofol anesthesia were well tolerated. Group 2 patients performed normal respiratory function after extubation (Figure1).
• 20% patients of both groups showed low grade fever within first 24 postoperative hours (Figure2).
• Nausea and vomiting occurred in 15% of group 1 patients and 20% of group 2 patients (Table 1, Figure3).
• All patients were started on soft milk palubation during 4.5 hours after surgery. Oral feeding had been successfully restored in both groups within first 24 postoperative (Figure4).

Commentary of results

• Combination of general anesthesia and local xylocain anesthesia is optimal for maxillofacial surgery for infants.
• Advantages of our experience are:
  a) stable hemodynamic and respiratory function,
  b) minimal postoperative nausea/vomiting,
  c) early start of oral feeding.
• The most important advantage of our method of general anesthesia is easy recovering of body function.

Table1: Postoperative complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>Group 1 (263 patients)</th>
<th>Group 2 (278 patients)</th>
<th>Total (541 patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative nausea and vomiting</td>
<td>39 (15%)</td>
<td>56 (20%)</td>
<td>95 (17.6%)</td>
</tr>
<tr>
<td>Aspiration and pneumonia</td>
<td>2 (0,8%)</td>
<td>4 (1,4%)</td>
<td>6 (1,1%)</td>
</tr>
<tr>
<td>Febrile Fever</td>
<td>24 (9%)</td>
<td>33 (12%)</td>
<td>57 (10,5%)</td>
</tr>
<tr>
<td>Non tolerating food for 6 hours after surgery</td>
<td>45 (17%)</td>
<td>61 (22%)</td>
<td>106 (19,6%)</td>
</tr>
</tbody>
</table>

Figure1. Aspiration and pneumonia
Figure2. Febrile Fever
Figure3. Postoperative nausea and vomiting
Figure4. Non tolerating food

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