Anesthesiology
V 75, No 3A, Sep 1991

## A933

TITLE: ANESTHETIC MORBIDITY ASSOCIATED WITH PHARYNGOPLASTY IN CHILDREN: A FIVE YEAR REVIEW

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**Introduction:** The superiorly based pharyngeal flap (pharyngoplasty) is a surgical procedure designed to correct hypernasal speech. It involves construction of a flap of pharyngeal tissue to obstruct air flow through the nose during phonation.[1] Following a major complication in our recovery room 16 hours after a pharyngoplasty for velopharyngeal insufficiency (VPI), we conducted a five year retrospective review of our experience with surgical correction of VPI.

**Methods:** The medical records of all children who underwent a pharyngoplasty for VPI from March, 1985 to March, 1990 were reviewed retrospectively. Items which were evaluated were the incidence and severity of perioperative complications, the anesthesiologist's evaluation of the difficulty of intubation and associated medical problems in these children.

**Results:** The medical records of 102 children were reviewed. All children had a superiorly based pharyngeal flap performed. There were 15 complications (14.7% incidence) noted (Table). Complications were grouped into two categories:
1) postoperative bleeding and related problems 2) postoperative airway obstruction without bleeding. There were seven complications associated with postoperative bleeding. Four of these children had resultant pulmonary aspiration requiring intubation and admission to the intensive care unit for 2 to 5 days. All eventually recovered. Seven children encountered airway obstruction postoperatively not associated with bleeding. These patients were managed with assisted ventilation until the airway obstruction subsided, however one of these children required reintubation. Two children developed sleep apnea following discharge and eventually required takedown of the pharyngoplasty. Thirty-one children (30.4%) had associated medical problems accompanying their VPI. Most common were the velo-cardio-facial syndrome in 7 children, neuromuscular disease in 4 children and congenital heart disease in 3 children. Nine children (8.8%) were described as having been a difficult intubation, three required fiberoptic intubation. There were no deaths in the 102 patients.

**Discussion:** The results of this study demonstrate that in our institution the incidence of anesthetic morbidity associated with pharyngoplasty in children is 15%. Most of the complications occurred in the early postoperative period and were the result of postoperative bleeding and/or airway obstruction. Nearly one third of the cases reviewed had associated disorders and 10% had complex airway anatomy making intubation difficult. Information derived from this review and a recent recovery room mortality have compelled us to intensify our perioperative management, including overnight admission to a unit capable of close surveillance and monitoring.

**References.**

1. Cleft Palate Journal, 16;46,1979.

Table. POSTOPERATIVE COMPLICATIONS

| TIME | BLEEDING | AIRWAY OBSTR. |
|---|---|---|
| First 24 hours | 6/102(5.8%)* | 5/102(4.9%) |
| After 24 hours | 2/102(1.9%) | 2/102(1.9%) |

*Four children with aspiration leading to ICU admission.

## A934

TITLE: CONCURRENT VALIDATION OF AN OBJECTIVE PAIN SCALE FOR INFANTS AND CHILDREN

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Because assessment of postoperative pain in children is difficult, health professionals often rely on assessment scales which measure pain through observation of behavioral and physiological responses. The Objective Pain Scale (OPS) is comprised of five areas of observation, including blood pressure, crying, movement, agitation, and verbal evaluation/body language. The OPS, which has been used for pain assessment in postoperative children, has tested reliability for infants and children[1] and validity for adolescents.[2] However, validity has not been established for infants and young children. This study examines the concurrent validity of the OPS by comparing its scores to those of the Children's Hospital of Eastern Ontario Pain Scale (CHEOPS), a behavioral pain scale with documented validity and reliability.[3]

METHODS: With institutional approval, 30 ASA PS I infants and children, ages 8 months to 13 years were studied in the PACU. There were no exclusion criteria for type of surgical intervention or type of anesthetic. When the patients were awake (time 0), three trained observers simultaneously evaluated each patient for 10 seconds and provided independent ratings on the OPS and the CHEOPS. Ten minutes after the initial observation, the method was repeated (time 10). The total scores of both pain scales were compared using Pearson correlation. OPS and CHEOPS total scores were also compared using Pearson correlation when categorized by age.

RESULTS: Pearson correlation of the OPS with the CHEOPS for time 0 was r=.88 and at time 10 was r=.94. Pearson correlations between the scales by age (in years) are shown in the following table:

| Age: | ≤ 2 | 2-5 | > 5 |
|---|---|---|---|
| Time 0 | r=.889 | r=.888 | r=.965 |
| Time 10 | r=.988 | r=.900 | r=.978 |

In addition, mean total pain scores of the two scales followed similar trends for patients who did or did not receive local anesthetic supplementation during surgery.

DISCUSSION: In pain assessment, management decisions can be based upon pain scores, especially in children with limited verbal skills. A criticism of existing scales used for pain assessment is the lack of evidence that the scale is valid, i.e., measuring the attribute it was designed to measure. Results of this study indicate that the OPS has very good concurrent validity when correlated with the CHEOPS. In the clinical setting, the OPS can be used for children of all ages for valid assessment of postoperative pain.

REFERENCES: 1. Anesth Analg 72:S199, 1991.
2. Anesthesiology 69:A770, 1988.
3. Advances in Pain Research & Therapy 9:395-402, 1985.