KAPC Practice Guideline

Title: Anesthesia Guidelines for Pediatric ENT procedures

Definitions:
Sleep-disordered breathing (SDB): wide-spectrum of breathing abnormalities during sleep ranging from mild snoring to severe sleep apnea
Obstructive sleep apnea (OSA): upper airway obstruction resulting in cessation in breathing for 10 seconds or more during sleep, typically diagnosed and graded in severity by polysomnography
Bronchopulmonary dysplasia (BPD): chronic lung disease found in young children (typically premature)
Failure to thrive (FTT): decelerated or arrested physical growth

Policy Overview: Despite the common nature of ENT procedures in children, patients can suffer from serious anesthesia and surgical complications including respiratory compromise, hemorrhage, neurologic injury and death[1-4]. A thorough review of the literature reveals specific patient groups that are at highest risk for these complications and steps to reduce this risk.

Young children commonly present for tonsillectomy to treat OSA. These children have an increased risk of perioperative complications beyond their stay in recovery [5-9]. National ENT and anesthesia guidelines support minimum age requirements for outpatient surgery in these patients. Oral opioids have been implicated in a significant number of deaths in otherwise healthy children post-tonsillectomy and therefore should be used sparingly in this patient population. The guidelines below specifically address the screening of patients appropriate for outpatient procedures as well as pain management regimens based upon age and comorbidities.

Policy Steps:

1. Outpatient Surgery Screening
    a. The following are **minimum age requirements** for scheduling at an outpatient surgery facility. Children who do not meet these requirements should have their surgery scheduled at a facility capable of admitting and monitoring after discharge from PACU. Individual providers and facilities may wish to increase these age minimums based upon availability of pediatric resources, patient comorbidities and provider discretion:
        i. **3 years** of age for **tonsillectomy**.
            1. If less than 3 years of age, inpatient observation should be planned after discharge from PACU[5-9]
            2. Consider continuous pulse-oximetry for children with OSA if available
        ii. **12 months** of age for **adenoidectomy**
        iii. **6 months** of age for **myringotomy**
    b. Based upon discretion of surgeon and anesthesiologist, consider scheduling children at a facility with admitting capabilities due to comorbidities including but not limited to:
        i. significant SDB or severe OSA[10-13]
        ii. significant lung disease (i.e. BPD or asthma)
        iii. chronic active respiratory infections
        iv. heart disease
        v. chromosomal abnormalities (i.e. Down Syndrome, craniofacial anomalies)
        vi. metabolic, neuromuscular or bleeding disorders
        vii. failure to thrive
        viii. significant obesity (BMI > 95th percentile See CDC BMI percentile calculator: *https://nccd.cdc.gov/dnpabmi/calculator.aspx*)[7,13,14]

2. Pain management
    a. Preoperatively: educate child and caregivers regarding pain expectation and management[13]
    b. Intraoperatively:
        i. Reduce opioid dose for patients with history of sleep apnea
        ii. Dexamethasone can reduce opioid requirements as well as PONV[13,15]
        iii. Consider dexmedetomidine for prevention and treatment of pain and emergence agitation in patients with history of sleep apnea[16,17]
    c. Postoperatively:
        i. Encourage hydration
        ii. Use acetaminophen and NSAIDs as first-line treatment unless contraindicated
        iii. Avoid oral opioids in young children whenever possible
        iv. No codeine due to significant variability in patient metabolism impacting safety and effectiveness[13]
        v. If oral opioids required in children with OSA, administer reduced dose due to heightened sensitivity[18]

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