

Opioid-Sparing Analgesia after Tonsillectomy and Adenoidectomy in the Pediatric Population



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Abstract

Objective

This study aims to evaluate rates of postoperative physician contact, readmissions, and post-tonsillectomy hemorrhage with opioid-sparing analgesia in children after adenotonsillectomy (T&A).

Study Design

Retrospective case series

Methods

All patients, less than 10 years of age, that underwent T&A and managed with acetaminophen, ibuprofen, and supplemented with dexamethasone for analgesia were included in study. Patients who underwent partial tonsillectomy were excluded. Chart review included phone calls and messages related to pain control, hospital re-admissions, and tonsil bleeds that required surgical intervention. Exact binomial 95% confidence intervals were determined for percentages.

Results

A total of 417 patients were included. 397 (95.2%) were not prescribed opioids and were included in study. Dexamethasone was prescribed on discharge in 392 (99.0%) patients. Postoperative readmission rate was 9.7% (95% CI 6.9-13.1%). Of the 37 (9.3%) patients that were readmitted, 21 (51.2%) patients were re-admitted for pain control or dehydration and 17 (45.9%) patients were admitted for concern for tonsil bleed. Overall tonsil bleed requiring surgical intervention was 3.4% (95% CI 1.8-5.8%). Total phone calls or messages for pain control was 24.7% (95% CI 20.4 - 29.3%). 21 (5.3%) patients contacted the office more than once.

Conclusion

Analgesia with acetaminophen and ibuprofen, supplemented with as-needed dexamethasone achieved similar rates of number of readmissions, surgical tonsil bleeds, and need for postoperative physician contact when compared to rates utilizing alternative analgesia in literature. Further studies are needed to evaluate the use of as-needed steroids and preoperative counseling to improve outcomes

Introduction

- T&A is a commonly performed surgical procedure in children in the United States^{1,2}.
- In 2021, the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) released a clinical practice guideline on opioid prescribing for common otolaryngologic procedures³.
- The guideline strongly recommends acetaminophen and ibuprofen as first-line agents and limits opioid use to cases where it is necessary and prescribed at the lowest effective dose³.

The aim of this study is to evaluate the impact of opioid-sparing analgesia in post-tonsillectomy care on health care utilization specifically in three areas: need for surgical intervention for bleed, readmission for dehydration, and frequency of postoperative physician contact.

Objective

This study aims to evaluate rates of postoperative physician contact, readmissions, and post-tonsillectomy hemorrhage with opioid-sparing analgesia in children after adenotonsillectomy (T&A).

Methods and Materials

- All patients, less than 10 years of age, that underwent T&A and managed with acetaminophen, ibuprofen, and supplemented with dexamethasone for analgesia were included in this study.
- Data collected from patient's charts included demographics, such as age, sex, race/ethnicity, and insurance type (public vs private).
- Clinical characteristics were documented including primary surgical diagnosis, presence of an underlying cognitive or developmental delay, syndromic diagnosis, or other behavioral challenges, and procedure(s) completed.
- Chart review included phone calls and messages related to pain control, hospital re-admissions, and tonsil bleeds that required surgical intervention.
- Exact binomial 95% confidence intervals were determined for percentages.

Results

- A total of 417 patients were included. 397 (95.2%) were not prescribed opioids and were included in study.
- Dexamethasone was prescribed on discharge in 392 (99.0%) patients. Postoperative readmission rate was 9.7% (95% CI 6.9-13.1%).
- Of the 37 (9.3%) patients that were readmitted, 21 (51.2%) patients were re-admitted for pain control or dehydration and 17 (45.9%) patients were admitted for concern for tonsil bleed.
- Overall tonsil bleed requiring surgical intervention was 3.4% (95% CI 1.8-5.8%).
- Total phone calls or messages for pain control was 24.7% (95% CI 20.4 - 29.3%).
- 21 (5.3%) patients contacted the office more than once.

Readmission	9.7%
Pain control/dehydration	21 (51.2%)
Tonsil Bleed	17 (45.9%)
Tonsil Bleed Requiring	3.4%
OR	
Post-op Physician Contact	24.7%

Table 2. Overall results for opioid-sparing patients

	Opioid-Free
Sex	
Male	229 (57.7%)
Female	168 (42.3%)
Race	
Asian	7 (1.8%)
Black	72 (18.1%)
Hispanic	2 (0.5%)
Multiracial	35 (8.8%)
White	27 (6.8%)
Unknown	254 (64.0%)
Insurance	
Private	257 (64.7%)
Public	136 (34.3%)
Unknown	4 (1.0%)
Diagnosis	
OSA/SDB	392 (98.7%)
Recurrent tonsillitis	5 (1.3%)
Cognitive/Behavioral Issues	
No	365 (91.9%)
Yes	32 (8.1%)

Table 1. Demographic Information and Patient Characteristics: Obstructive Sleep Apnea (OSA), sleep-disordered breathing (SDB)

Discussion

- Effective analgesia is a crucial aspect of postoperative T&A care in children, to avoid risk of dehydration, readmissions, and patient distress
- This study shows that opioid sparing analgesia, with use of as-needed dexamethasone, achieved similar re-admission rate, risk of post-tonsillectomy hemorrhage, and rate of postoperative physician contact when compared to overall rates reported in literature
- By specifically evaluating postoperative physician contact as a reflection of care burden and healthcare utilization, this analysis offers another dimension supporting opioid-sparing regimens.
- It is important to note that although the rates of dehydration and postoperative physician contact fall within rates reported in literature, these rates are high^{11,12}
- Preoperative education and adequate counseling can play a large role in maintaining adequate hydration and decreasing postoperative contact, which could be investigated further
- Further studies are needed to consider children in different age groups and intraoperative surgical preferences that may contribute to postoperative pain levels

Conclusions

Analgesia with acetaminophen and ibuprofen, supplemented with as-needed dexamethasone achieved similar rates of number of readmissions, surgical tonsil bleeds, and need for postoperative physician contact when compared to rates utilizing alternative analgesia in literature. Further studies are needed to evaluate the use of as-needed steroids and preoperative counseling to improve outcomes

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