



Post-Tonsillectomy & Adenoidectomy
Hemorrhage:
Emergency Department
Clinical Practice Guideline (CPG)

Post Op T&A Bleed Clinical Practice Guideline

Child with post-op T&A bleed



INCLUSION CRITERIA

- *History of tonsillectomy in the previous three weeks
- *History of bleeding from operative site (tonsillar fossa) or observed bleeding from operative site
- *History of hemoptysis or observed hemoptysis
- *History of hematemesis or observed hematemesis



If inclusion criteria met: **Triage Immediately**
ESI Level 2
****Make all NPO****

Active or Profuse Bleeding
Or Signs of Shock [□]



- Place in trauma room
- NPO
- 1 large bore PIV
- CBC, BMP, PT/PTT/INR
- Type & Cross
- NS bolus (20 mL/kg)
- Immediate ENT consult
- Prepare for OR
- Treat signs of shock [□]
- If shock present- start a second large bore IV

Child with recurrent
bleeding (but no active
bleeding in the ED)

Child with no active
bleeding, only 1 minor
episode at home, and well
appearing



- NPO
- Insert PIV
- CBC, BMP, PT/PTT/INR, type and screen
- If Hg <10, obtain Type & Cross
- Initiate NS bolus (20 mL/kg)
- Immediate ENT consult

[□] Signs of Shock

Depressed mental status, Tachycardia,
Delayed cap refill, Hypotension, Pallor

Objectives: 1. To standardize evaluation and management of children with post tonsillectomy hemorrhage.

2. To improve clinical outcomes in children with hemorrhage after tonsillectomy.

Target Population: Children and adolescents who are post-tonsillectomy and/or adenoidectomy

Inclusion Criteria: History of tonsillectomy in the previous three weeks AND one of the following:

- History of bleeding from operative site (tonsillar fossa) or observed bleeding from operative site
- History of hemoptysis or observed hemoptysis
- History of hematemesis or observed hematemesis

Target Users: Clinicians at SSM Health Cardinal Glennon Children's Hospital Emergency Department

Introduction: Tonsillectomy and adenoidectomy (T&A) is a common procedure in children with roughly 500,000 tonsillectomies performed annually in the United States. The incidence of hemorrhage after tonsillectomy is approximately 3%, thus predicting 15,000 cases of bleeding per year. Most of these patients will present primarily to an emergency department for evaluation. The child presenting with post tonsillectomy hemorrhage needs rapid assessment as they may require operative intervention. Hemorrhage may be life-threatening and management is complicated by potential for airway obstruction and difficulty with intubation.

Post-tonsillectomy hemorrhage can be classified as either primary (within 24 hours of surgery) or secondary (greater than 24 hours after surgery). Secondary bleeding is more common, with the highest incidence of bleeding at 5-10 days postoperatively. The etiology of bleeding is uncertain, but likely due to the sloughing of a fibrin clot or eschar. This may be precipitated by an underlying infection, chronic inflammation, trauma, vomiting, or dehydration.

The goal of this protocol is to standardize and improve medical treatment for patients presenting with post-tonsillectomy hemorrhage. After medical optimization, children with reports of bleeding that have a reassuring exam will likely be admitted for close observation. If a clot is present- clot removal and cauterization of the underlying vessel can be attempted. More significant bleeding or uncooperative patients may require operative intervention.

Assessment and Diagnosis:

1. History

- Date of surgery, surgeon, location of surgery
- Time of last oral intake
- Time (if any) of last ibuprofen or aspirin
- Any other medications?
- Assess bleeding as accurately as possible
 - Volume
 - Duration of bleeding episode(s)
 - Number of episodes
 - When the last episode occurred

2. Clinical Assessment

- Reports of spitting up blood
- Profuse active bleeding
- Vomiting

- Decreased oral intake
- Presence of fresh clot?
- Signs of dehydration
 - Oliguria
 - Tacky mucous membranes
 - Tachycardia
 - Absent tears
 - Sunken eyes
 - Listlessness or lethargy
- Signs of shock
 - Depressed mental status
 - Lethargy
 - Tachycardia with delayed cap refill
 - Hypotension
 - Pallor
- Signs of airway obstruction
 - Choking or gagging
 - Decreased oxygen saturation
 - Difficulty breathing
 - Respiratory distress

3. Laboratory Assessment

- CBC
 - To assess degree of blood loss
 - Compare to pre-op H/H, if available
 - To verify appropriate platelet count
- BMP
 - To assess degree of dehydration
- PT/PTT
 - To assess coagulation pathways
- Type and Screen
 - Obtain type and screen with initial blood draw
- Type and Cross
 - If Hg < 10
 - If patient continues to actively bleed
 - If ENT confirms patient is going to the OR

4. Radiologic Assessment

- Routine imaging is not required for a post-op T&A Bleed

Management and Treatment:

- Protect the airway
 - Sit upright or place in left lateral decubitus position
- Administer oxygen if needed
- Set up suction, bag and mask at bedside
- Avoid unnecessary or excessive suctioning
- Follow algorithm above
- Consult ENT immediately

Disposition: Most children with post tonsillectomy hemorrhage will be admitted to the ENT service for close monitoring. Some will require immediate intervention in the operating room.

References:

- Fleisher and Ludwig Textbook of Pediatric Emergency Medicine
- Spektor, Z., et al., *Risk factors for pediatric post-tonsillectomy hemorrhage*. Int J Pediatr Otorhinolaryngol, 2016. **84**: p. 151-5.
- Arora, R., et al., *Post tonsillectomy hemorrhage: who needs intervention?* Int J Pediatr Otorhinolaryngol, 2015. **79**(2): p. 165-9.
- Johnson LB, Elluru RG, Myer CM 3rd. Complications of adenotonsillectomy. Laryngoscope 2002; 112:35.
- De Luca Canto G, Pachêco-Pereira C, Aydinov S, et al. Adenotonsillectomy Complications: A Meta-analysis. Pediatrics 2015; 136:702.
- Cohen D, Dor M. Morbidity and mortality of post-tonsillectomy bleeding: analysis of cases. J Laryngol Otol 2008; 122:88.
- Windfuhr JP, Schloendorff G, Baburi D, Kremer B. Serious post-tonsillectomy hemorrhage with and without lethal outcome in children and adolescents. Int J Pediatr Otorhinolaryngol 2008; 72:1029.
- Perkins JN, Liang C, Gao D, et al. Risk of post-tonsillectomy hemorrhage by clinical diagnosis. Laryngoscope 2012; 122:2311.

Authors: Chelsea Majerus, MD, Division of Pediatric Emergency Medicine
Joel Franco, MD, Division of Otolaryngology
Dary Costa, MD, Division of Otolaryngology

Accepted by Clinical Practice Guideline Committee: May 2017

Posted on website: June 2017

Date of last revision: N/A

Date of next revision: May 2019

Financial Disclosure: The authors have no financial relationships relevant to this guideline to disclose.

©2015 by St. Louis University School of Medicine, Cardinal Glennon Children's Medical Center, all rights reserved.

The recommendations contained in these guidelines do not provide an exclusive course of action for all medical care and does not define the standard of care. The guidelines are for educational purposes only and do not serve as a replacement for a physician's professional judgment. What is considered a proper assessment based on the physician's professional judgment should be considered on a case-by-case basis and the needs of each patient.

Although considerable efforts have been made to ensure that the information upon which these guidelines are based is accurate and up to date, users of these guidelines should confirm— by way of independent sources— that the information contained within them is correct. SSM Health Care assumes no responsibility for any inaccuracies, information perceived as misleading, or the success of any treatment regimen detailed in the guidelines. The guidelines are not meant to be a replacement for training, experience, continued medical education or studying the latest literature and drug information.