Evaluation and Management of Post-Tonsillectomy Hemorrhage in the Emergency Department

AIM

- Standardize evaluation and management of children with post-tonsillectomy hemorrhage
- Improve clinical outcomes in children with hemorrhage after tonsillectomy

POST-TONSILLECTOMY HEMORRHAGE FACTS

- Incidence of post-tonsillectomy hemorrhage is ~3%, predicting ~15,000 cases per year
- Presentation is typically to an emergency department
- Rapid assessment is required as children may require operative intervention
- Hemorrhage can be life-threatening, and management is complicated by potential for airway obstruction and difficult intubation
- Primary bleeding occurs within 24 hours of surgery, while secondary bleeding occurs > 24 hours after surgery
- Secondary bleeding is more common, with highest incidence 5-10 days post-operatively

INCLUSION CRITERIA:

- History of tonsillectomy in the previous 3 weeks AND ANY 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

TRIAGE IMMEDIATELY

- ESI Level 2
- Make NPO

Active or Profuse Bleeding
OR
Signs of Shock
OR
Signs of Airway Obstruction

Signs of Shock include depressed mental status, tachycardia, delayed capillary refill, hypotension, pallor

YES

ALL PATIENTS
- Place in Trauma Room
- Establish peripheral access with a large bore peripheral IV
- Consult Pediatric ENT immediately
- Obtain CBC, BMP, PT/INR, PTT, Type and Cross
- Consider activating Massive Transfusion Protocol (MTP), if clinically indicated
- Give Normal Saline bolus 20mL/kg (max 1L)
- Protect the airway
  - Sit upright or place in left lateral decubitus position
- Avoid unnecessary or excessive suctioning
- Administer oxygen, if needed
- Prepare for OR

CONSIDER, WHEN APPROPRIATE
- Additional fluid resuscitation for signs of shock
- Second large bore peripheral IV for patients with signs of shock
- Transfer to a facility with pediatric ENT operative capabilities, if none available at local facility, following stabilization

NO

May include a child with recurrent bleeding but no active bleeding in the ED
OR
Child with no active bleeding, 1 minor episode at home, and well-appearing

ALL PATIENTS
- Insert peripheral IV
- Obtain CBC, BMP, PT/INR, PTT, Type and Screen
- Consult Pediatric ENT immediately
- Provide fluid resuscitation as clinically indicated
  - A normal saline bolus of 20mL/kg (max 1L) is recommended in most cases as most patients are volume depleted
  - If a bolus is not indicated, start maintenance fluids (D5 NS or D5 LR)
- Protect the airway
  - Sit upright or place in left lateral decubitus position
- Avoid unnecessary or excessive suctioning

CONSIDER, WHEN APPROPRIATE
- Transfer to a facility with pediatric ENT inpatient or operative capabilities, if none available at local facility, following stabilization and discussion with ENT

DISPOSITION

Most children with a post-tonsillectomy hemorrhage will require admission to ENT for close monitoring, with some requiring immediate intervention in the operating room

ASSESSMENT AND DIAGNOSIS CONSIDERATIONS

History
- Date of surgery, surgeon, location of surgery
- Time of last oral intake
- Time (if any) of last NSAID or aspirin
- Any other medications?
- Volume, duration of bleeding episode(s), number of episodes, time of last episode

Clinical Assessment
- Presence of active profuse bleeding, spitting up blood, vomiting
- Signs of dehydration
  - Oliguria, tacky mucous membranes, tachycardia, absent tears, sunken eyes, lethargy or listlessness
- Signs of shock
  - Depressed mental status, tachycardia, delayed capillary refill, hypotension, pallor
- Signs of airway obstruction
  - Choking/gagging, decreased oxygen saturation, respiratory distress
- Routine imaging is not required

SSMHealth Cardinal Glennon Access Center Transfer Line
888-229-2424

1. SSMHealth Cardinal Glennon CPG Home

2. Resources

a. Fleisher and Ludwig Textbook of Pediatric Emergency Medicine
b. Spektor Z, et al. Risk factors for pediatric post-tonsillectomy hemorrhage. *Int J Pediatr Otorhinolaryngol*. 2016; 84:151-155.
c. Arora R, et al. Post tonsillectomy hemorrhage: who needs intervention? *Int J Pediatr Otorhinolaryngol*. 2015;79(2):165-169.
d. Johnson LB et al. Complications of adenotonsillectomy. *Laryngoscope*. 2002; 112:35-6.
e. De Luca Canto G, et al. Adenotonsillectomy Complications: A Meta-analysis. *Pediatrics*. 2015; 136(4): 702-718.
f. Cohen D, et al. Morbidity and mortality of post-tonsillectomy bleeding: analysis of cases. *J Laryngol Otol*. 2008; 122(1):88-92.
g. Windfuhr JP, et al. Serious post-tonsillectomy hemorrhage with and without lethal outcome in children and adolescents. *Int J Pediatr Otorhinolaryngol*. 2008; 72(7): 1029-1040.
h. Perkins JN, et al. Risk of post-tonsillectomy hemorrhage by clinical diagnosis. *Laryngoscope*. 2012; 122(10):2311-2315.

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