

Aim: To standardize perioperative treatment of patients undergoing T+A or tonsillectomy alone

Patient presents to ENT for consideration of T+A

Does the patient meet the following criteria for T+A?

- Obstructive sleep apnea (OSA) or Sleep disordered breathing
- Recurrent throat infection
- PFAPA
- Other indication (Note 1) and no contraindications (Note 2)

Yes

Plan for T+A

- Review risks, benefits, alternatives with caregivers (Note 3)
- Discuss pre and post-operative anticipated course
- Have caregiver schedule pre-op physical with primary care provider for within 30 days of surgery

Does the patient have any of the following factors which might necessitate hospitalization (Note 4)?

- <3 years old
- Severe OSA: apnea-hypopnea index ≥ 10 obstructive events/hour, oxygen saturation nadir $< 80\%$, or both
- Craniofacial syndromes (eg: trisomy 21)
- History of congenital heart disease or kidney failure
- Presence of bleeding disorder

Yes

Schedule surgical case with post-op hospitalization

No

Schedule same-day surgery

- Follow Children's guidelines for candidacy for surgery at Minnetonka outpatient surgery center (p.3)

Peri/Intraoperative Management

- Administer IV dexamethasone (0.5 mg/kg dose, max dose 12 mg) x 1
- Perioperative antibiotics not routinely recommended

Same-Day case?

No

Yes

Any of the following in PACU: failure to get off O2 within 2 hours, bleeding post-operatively, need for reintubation?

No

Yes

Inpatient monitoring

Med-surg unit appropriate unless specified by surgeon that PICU or PICU stepdown is required

- Vital signs per unit
- Alert provider for bleeding (Note 5), significant desaturations, fever
- Pain control with acetaminophen q6 hours, ibuprofen q6 hours (IV ketorolac if needed)
- Oxycodone every 6 hours as needed for breakthrough pain only for patients ≥ 7 years old (Codeine and tramadol should NOT be used)
- Oral dexamethasone 4 mg on post op day 1, 3 and 5.
- Advance to soft diet
- Goal O2 sats $> 90\%$
- Discuss use of CPAP/BiPAP on case-by-case basis

Consider alternate management strategies.
Off-guideline

EXCLUSION GUIDELINES

Patients **excluded** from this guideline:

- Patients with head and/or neck trauma

Discharge planning

- Tolerating clear liquids
- Acetaminophen and ibuprofen scheduled q6 hours.
- Oxycodone every 6 hours as needed for breakthrough pain only for patients ≥ 7 years old (Codeine, tramadol, or combination opioids should NOT be used)
- Oral dexamethasone 4 mg on post op day 1, 3 and 5.
- Caregiver education completed (Note 6)
- Follow-up phone call with ENT 3-4 weeks postoperatively

ENT Follow-up phone call

- Document in medical record presence/absence of primary (within 24 hrs of surgery) or secondary (after 24 hrs) bleeding
- Assess pain control
- Assess tolerance of diet
- Assess sleep symptoms

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Note 1. Indications for T+A

- Clinicians may recommend tonsillectomy for recurrent throat infection w/ ≥ 7 episodes in the past year, ≥ 5 episodes per year for 2 years, or ≥ 3 episodes per year for 3 years with sore throat and ≥ 1 of the following: temperature $>38.3^{\circ}\text{C}$ (101°F), cervical adenopathy, tonsillar exudate, or positive test for group A beta-hemolytic streptococcus.
 - If patient doesn't meet above criteria, consider additional factors including: multiple antibiotic allergies/intolerance, PFAPA (periodic fever, aphthous stomatitis, pharyngitis, and adenitis), or history of >1 peritonsillar abscess.
- Clinicians should ask caregivers of children with sleep disordered breathing and tonsillar hypertrophy about comorbid conditions that may improve after tonsillectomy, including growth delays, poor school performance, enuresis, asthma, and behavioral problems.
- Children with sleep disordered breathing should have polysomnography (PSG) prior to T+A if they are <2 years of age or if they exhibit any of the following: morbid obesity, Down syndrome, craniofacial abnormalities, neuromuscular disorders, sickle cell disease, or mucopolysaccharidoses. Severe OSA is considered $\text{AHI} >10$.
- Consider PSG prior to T+A for sleep disordered breathing if need for tonsillectomy is uncertain or there is discordance between the exam and the reported severity of OSA.
- Clinicians should recommend tonsillectomy for children with obstructive sleep apnea (OSA) documented by overnight polysomnography (PSG).

Note 2. Contraindications for T+A

- Uncontrolled Bleeding disorder (Should be referred to hematology prior to any surgical intervention)
- Active local infection (typically prefer 4 weeks recovery after episode of acute infection)

Note 3. Risks, Benefits, Alternatives for T+A

- Clinicians should counsel patients and caregivers and explain that obstructive sleep-disordered breathing (oSDB) may persist or recur after tonsillectomy and may require further management.
- The clinician should counsel patients and caregivers regarding the importance of managing post-tonsillectomy pain as part of the perioperative education process and should reinforce this counseling at the time of surgery with reminders about the need to anticipate, reassess, and adequately treat pain after surgery.
- The clinician should discuss the risk of post-tonsillectomy hemorrhage and the recommendations (return to hospital) if this occurs

Note 4. Severe OSA and Severe Co-morbidities that may need post-op admission at the discretion of the surgeon: $\text{AHI} > 10$, Down syndrome, craniofacial abnormalities, neuromuscular disorders, sickle cell disease, or mucopolysaccharidoses, history of Congenital heart disease, history of kidney failure, history of bleeding disorder. PICU or PICU stepdown at the discretion of the surgeon (comorbidities, OSA severity, etc.)

Note 5. Post-Operative Complications

- Bleeding should be discussed urgently with surgeon on call from the ENT group that did the initial surgery, most commonly seen on post-op day 0/1 or on post-op days 6-8.
- Fever is not uncommon. Ok to treat with anti-pyretics (acetaminophen, ibuprofen). Evaluate as indicated for other causes not related to surgery if persistent. Alert surgeon urgently if neck stiffness or meningismus.

Note 6. Caregiver education

- Parents should receive the standard postoperative care sheet for adenotonsillectomy/tonsillectomy alone prior to leaving the hospital

References

1. Mitchell, R.B., Archer, S.M., Ishman, S.L., Rosenfeld, R.M., Coles, S., Finestone, S.A., Friedman, N.R., Giordano, T., Hildrew, D.M., Kim, T.W., Lloyd, R.M., Parikh, S.R., Shulman, S.T., Walner, D.L., Walsh, S.A. and Nnacheta, L.C. (2019), Clinical Practice Guideline: Tonsillectomy in Children (Update). Otolaryngology–Head and Neck Surgery, 160: S1-S42. <https://doi.org/10.1177/0194599818801757>

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As an outpatient pediatric surgery center, Children's – Minnetonka strives to provide safe, high-quality care. The following guidelines have been adopted to promote appropriate patient selection. Adherence to these guidelines should enhance safety for the patients and improve efficiency of the OR schedule.

AGE Parameters:

- Children should be 18 months of age for adenoidectomies and 3 years of age for tonsillectomies with or without adenoidectomies.

Patients who CAN (in most cases) be scheduled at Children's Minnetonka

- **HEME:** Non-hemophilia bleeding disorders (including von Willebrand's disease) must be reviewed on a case-by-case basis.
 - The type of surgery may have an impact on risk of bleeding.
 - Some such patients require pre-medication with DDAVP. Some insurers cover this medication and others don't when procedures are done at outpatient facilities.
 - This does not include patients for IDTF (Radiology)
- **ENDO:** Diabetes, thyroid disorders & other endocrine if stable with a management plan in place.
- **PULM:** Well-controlled asthma
- **CARDIAC:** Many, but not all, children with congenital heart disease can be cared for at Children's – Minnetonka. *These are best addressed on a case-by-case basis.*
 - **NOT patients with hypoplastic left heart syndrome** regardless of palliative procedures (e.g. Norwood Glenn shunt, Fontan)
 - **NOT patients with pacemakers**
- **NEURO:** Well-controlled seizure disorders (under medical management)
- **MEDICAL COMPLEXITY:** Children with cognitive/motor disabilities may receive care at Children's – Minnetonka on a case-by-case basis.

Patients who CAN be scheduled at Children's Minnetonka but with time-parameters

- **ID/PULM:** History of recent pneumonia or upper respiratory tract infection
 - Scheduling such patients 2 – 4 weeks after the resolution of symptoms is reasonable.
 - Refer to Pre-Procedure Infectious/Communicable Disease Guideline on Star Net

Patients who should NOT be scheduled at Children's Minnetonka

- **HEME:** Hemophilia (Insurers won't cover prophylactic Factor VIII infusions in outpatient surgery centers)
- **CARDIAC:**
 - Hypoplastic left heart syndrome
 - Pacemaker
- **AIRWAY/PULM:**
 - Known history of a difficult intubation
 - Bronchoscopy need
 - Premature infants on O2 therapy or home apnea monitoring
- **GENERAL:** Patients with morbid obesity (e.g., BMI > 35) (due to increased anesthetic and post-anesthetic risk)

NOTE: Given adherence to the above guidelines, nearly all ASA classification I and II patients are acceptable candidates for care at Children's – Minnetonka. ASA III patients can be accommodated at the discretion of the anesthesiologist