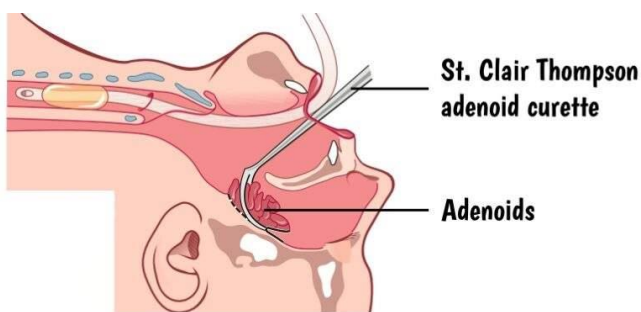




Adenoidectomy

Introduction

Adenoidectomy, the surgical removal of the adenoids, is one of the most frequently performed pediatric surgeries. This procedure can be performed alone, in combination with tonsillectomy (**adenotonsillectomy**), or with myringotomy and grommet insertion to treat otitis media with effusion. When combined with tonsillectomy, the adenoids are removed first, and the nasopharynx is packed before the tonsillectomy begins. Despite its disadvantages, such as unpredictable bleeding, poor access to choanal adenoids causing recurrence, and potential injury to the eustachian tube opening, **the blind curettage method** remains the most commonly used adenoidectomy method. While the traditional blind curettage method remains common, newer endoscopic techniques are gaining popularity due to improved visualisation and precision.



Adenoidectomy

Preoperative Assessment:

1. **Investigations for surgical fitness:** Hemogram, urine analysis (routine and microscopic), blood sugar (fasting), blood urea/creatinine, chest X-ray, ECG.
2. **Coagulation Profile:** Prothrombin time, partial thromboplastin time, bleeding time, clotting time and platelet count.
3. **X-ray of the Nasopharynx** (Lateral View with Open Mouth): To assess the size of the adenoids and the extent of nasopharyngeal air space compromise.
4. **Nasal Endoscopy:** Useful for assessing adenoid size in cooperative children and is considered the gold standard for diagnosis.
5. **Children with Down Syndrome:** Assess for potential atlantoaxial instability (subluxation of the first and second cervical vertebrae) and cardiac abnormalities.

Indications for Adenoidectomy:

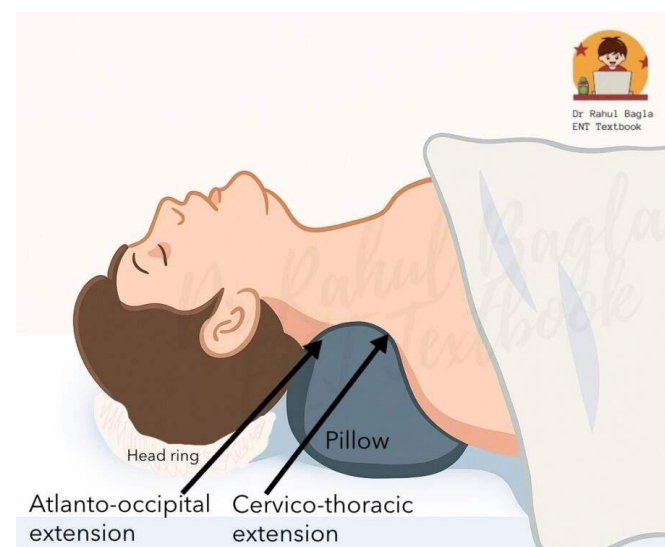
1. **Adenoid Hypertrophy:** Causing snoring, mouth breathing, obstructive sleep apnea syndrome, craniofacial growth abnormalities (adenoid facies), or speech abnormalities (e.g., rhinolalia clausa).
2. **Chronic Otitis Media with Effusion:** Due to anatomical obstruction of the eustachian tube.
3. **Recurrent Acute Otitis Media:** Associated with adenoiditis or adenoid hyperplasia.
4. **Dental Malocclusion:** Adenoidectomy does not correct dental abnormalities but prevents recurrence after orthodontic treatment.
5. **Recurrent Rhinosinusitis**

Contraindications for Adenoidectomy:

1. **Cleft Palate or Submucous Palate:** Removal of adenoids causes velopharyngeal insufficiency, causing a hypernasal voice (rhinolalia aperta) and regurgitation of food.
2. **Acute Infection of the Upper Respiratory Tract:** Surgery during an active infection can increase the risk of bleeding, anaesthetic complications, and post-operative infections.
3. **Haemorrhagic Diathesis.**

Surgical Steps: Traditional Adenoidectomy (Blind Curettage)

1. **Anaesthesia:** Usually performed under **general anaesthesia** with endotracheal intubation, providing a secure airway.



Rose's position

Neck is extended by a pillow under the shoulders and the head is supported on a ring.

2. Position:

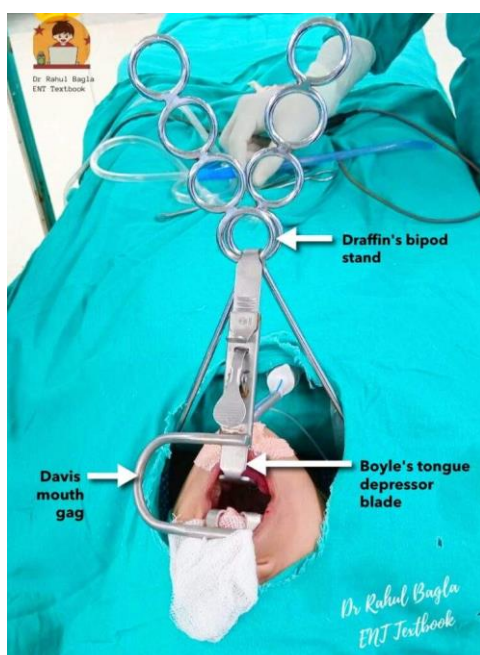
- The patient is typically placed in **Rose's position** (also known as the Tonsillectomy position).
- The patient lies supine with a pillow or shoulder bag placed under the shoulders. This manoeuvre leads to extension at the atlanto-occipital and cervicothoracic joints (**Important for viva**).
- A rubber ring is placed under the head to stabilise it.
- **Rationale for Rose's position:** This position allows for optimal visualisation of the oral cavity and oropharynx. Critically, it creates a dependent position for the nasopharynx, which helps to prevent the aspiration of blood and secretions into the trachea during surgery.
- The surgeon sits behind the patient's head, using a headlight for illumination.

3. Mouth Opening and Gag Insertion: We use a **Boyle-Davis mouth gag** to keep the mouth open. Draffin's bipods suspend the gag, stabilising both the gag and the patient's head. The surgeon uses a curved tongue depressor to elevate the soft palate.

4. Throat Pack Insertion: A throat pack is inserted into the oropharynx. This serves a vital purpose:

- It prevents blood and secretions from entering the oesophagus.
- It prevents the aspiration of laryngeal clots.
- It minimises air and anaesthetic agent leakage.

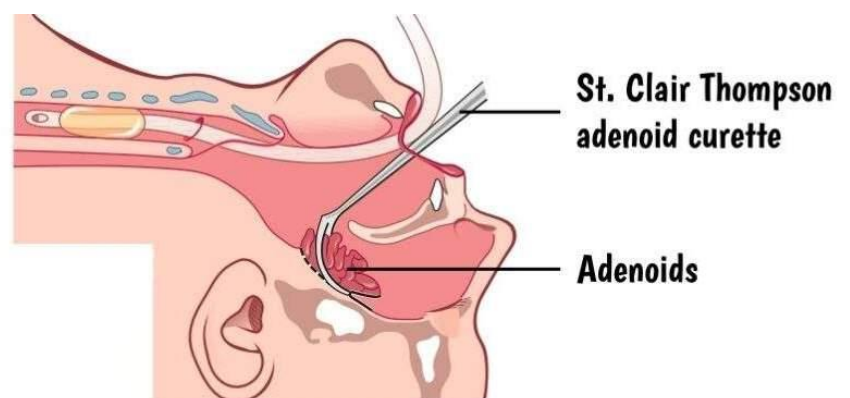
5. Pre-Curettage Assessment: We use a finger to palpate the adenoid mass, pushing it medially and check for any abnormal vascular structures, such as a pulsating aberrant carotid artery, which is a rare but critical finding.



6. Adenoid Curette Insertion: We use an appropriately sized **St. Clair Thomson's adenoid curette with a guard**. The curette is held in the right hand in a dagger-style grip. We introduce the

curette into the nasopharynx, apply it over the posterior border of the nasal septum and then move downwards to engage the adenoid tissue.

7. Adenoid Removal: With a single, gentle, sweeping movement, we shave off the bulk of the adenoid tissue. We then use smaller curettes (luc's forceps) for any lateral masses and punch forceps to remove residual lymphoid tissue. However, it is a blind procedure, and it is better to use a nasal endoscope to visualise the adenoid removal, avoiding injury to surrounding structures. Care is taken to avoid injury to the pharyngeal ends of the eustachian tubes.



8. Hemostasis: We achieve hemostasis by packing the area with a gauze swab for several minutes. If bleeding persists, we can electrocoagulate persistent bleeders under direct vision (if using an endoscope) or by carefully packing. If all else fails, a postnasal pack can be left for 24 hours.

9. Combined Procedures: If an **adenotonsillectomy** is planned, we perform the adenoidectomy first and place a pack in the nasopharynx for hemostasis. The tonsillectomy can then be performed with the pack in place.

Other Techniques for Adenoidectomy include:

- 1. Microdebrider Adenoidectomy:** This technique uses a rotating blade within a sheath to cut the adenoid tissue while simultaneously aspirating blood and tissue. It provides excellent hemostasis and allows for precise tissue removal under endoscopic guidance.
- 2. Endoscopic Adenoidectomy:** This is a major advance. Using a nasal endoscope, the surgeon can directly visualise the adenoid pad, the Eustachian tube orifices, and the choanae. This allows for complete removal of the adenoids and minimises the risk of injuring surrounding structures.
- 3. Monopolar Cautery/Suction Diathermy Adenoidectomy:** This method uses heat to both cut and coagulate tissue, which significantly minimises blood loss and post-operative bleeding.
- 4. Transoral Coblation Adenoidectomy:** This technique uses radiofrequency energy to ablate tissue at low temperatures. It

results in minimal thermal damage to surrounding tissues and is associated with reduced pain and faster recovery.

5. **KTP Laser Adenoidectomy:** While effective, this method is less common due to its high cost and the risk of collateral thermal damage, which can lead to postoperative nasopharyngeal stenosis.

Postoperative Care:

- 1. **Monitoring:** We closely monitor the patient for any signs of bleeding from the nose or mouth. We also check vital signs (pulse, respiration, blood pressure) regularly. We keep the patient in a **coma position** (recovery position) until they are fully conscious to prevent aspiration.
- 2. **Diet:** Once the patient is fully recovered from anesthesia, we allow cold liquids like ice cream or cold milk. Sucking on ice cubes can help relieve pain and discomfort. We then gradually advance the

diet from soft foods to solids, encouraging plenty of fluids to maintain hydration.

- 3. **Hygiene:** We advise patients to use gargles, such as betadine or saltwater, three to four times a day. Rinsing the mouth with plain water after every meal helps keep it clean.
- 4. **Medications:** We manage postoperative pain with analgesics like **paracetamol**. A suitable oral antibiotic can be prescribed for about a week to prevent infection.
- 5. **Discharge:** Patients are typically discharged within 24 hours if there are no complications. Normal activities can usually be resumed within two weeks.

Complications:

Complications	Description and Management
Hemorrhage	• Primary/ Reactionary haemorrhage: Occurs within the first 24 hours. • Secondary haemorrhage: Occurs after 24 hours, often due to infection or sloughing. • Management: If bleeding is profuse, the patient must be taken to the operating theatre immediately for control. This might involve electrocautery or, in severe cases, postnasal packing. A rising pulse rate and vomiting of dark-colored blood are important signs of occult haemorrhage.
Injury to the Eustachian Tube	• The pharyngeal opening of the Eustachian tube is a crucial landmark. Careless curettage can cause injury, leading to scarring and permanent dysfunction. • Prevention: Careful technique, especially with endoscopic guidance.
Injury to Pharyngeal Musculature and Vertebrae	• Excessive hyperextension of the neck or undue pressure from the curette can injure the pharyngeal wall or even the cervical vertebrae. • Prevention: Proper positioning and careful surgical technique.
Grisel Syndrome	• A rare but important complication involving atlantoaxial dislocation, often due to spasm of the paraspinal muscles. It can be caused by surgery or excessive diathermy use. • Clinical features: Painful neck movements and torticollis. • Management: Anti-inflammatory drugs and neck immobilisation. Rarely, neurosurgery may be required.
Velopharyngeal Insufficiency (VPI)	• Risk Factor: Undiagnosed submucous cleft palate.
 – • Clinical features: Hypernasal voice (rhinolalia aperta) and nasal regurgitation of fluids. • Prevention: Always check for a submucous cleft palate before surgery.
Nasopharyngeal Stenosis	• A rare complication caused by scarring and fibrosis, especially with excessive diathermy use or laser surgery.
Recurrence	• Occurs due to the regrowth of adenoid tissue that was not completely removed. This is more common after blind curettage.
Dental Injury	• It can accidentally occur from the mouth gag or if the gag slips.
Nasopharyngeal Blood Clot	• A blood clot can form in the nasopharynx during the procedure. This is sometimes called a “coroner’s clot.” • Prevention: It is crucial to suction out this clot before removing the mouth gag to prevent potentially fatal acute airway obstruction upon extubation.