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Tonsillectomy in Modern Otolaryngology: Indications, Techniques, and Outcomes

Dr. Md Hassibul Hakam Ibn Samad[1]

[1]Labaid Specialized Hospital, Dhaka, Bangladesh

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Abstract: Tonsillectomy remains one of the most commonly performed surgical procedures in otolaryngology. Despite its long history, evolving indications and surgical techniques continue to shape its role in modern practice. This article reviews current indications, operative approaches, complications, and outcomes, with a focus on evidence-based practice and emerging trends.

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I. INTRODUCTION

Tonsillectomy, the surgical removal of the palatine tonsils, has been practiced for over two millennia. Once performed routinely for recurrent throat infections, its indications have become more selective with advances in medical therapy and a better understanding of disease processes. Today, tonsillectomy is primarily indicated for recurrent tonsillitis and obstructive sleep-disordered breathing.

II. ANATOMY AND FUNCTION OF THE TONSILS

The palatine tonsils are part of Waldeyer's ring, playing a role in immune surveillance during early childhood. They are located in the tonsillar fossa between the palatoglossal and palatopharyngeal arches.

A. Indications for Tonsillectomy

➢ *Recurrent Tonsillitis*

The most widely accepted criteria are based on the Paradise criteria:

- ≥7 episodes in 1 year
- ≥5 episodes/year for 2 consecutive years
- ≥3 episodes/year for 3 consecutive years

➢ *Obstructive Sleep Apnea (OSA)*

Tonsillar hypertrophy is a major cause of pediatric OSA. Tonsillectomy, often combined with adenoidectomy, is first-line treatment.

➢ *Peritonsillar Abscess*

Recurrent or non-resolving abscess may necessitate interval tonsillectomy.

➢ *Suspicion of Malignancy*

Unilateral tonsillar enlargement or atypical features require histopathological evaluation.

➢ *Other Indications*

- Tonsilloliths (selected cases)
- Halitosis resistant to medical therapy
- Dysphagia due to tonsillar hypertrophy

B. Surgical Techniques

Multiple techniques exist, each with advantages and limitations:

➢ *Cold Steel Dissection*

Traditional method using scalpel and scissors.

- Advantages: low cost, minimal thermal injury
- Disadvantages: higher intraoperative bleeding

➢ *Electrocautery*

Uses thermal energy for dissection and hemostasis.

- Reduced blood loss
- Increased postoperative pain due to tissue damage

➢ *Coblation Tonsillectomy*

Employs radiofrequency energy in a saline medium.

- Less postoperative pain
- Faster recovery

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➢ *Harmonic Scalpel*
Uses ultrasonic vibrations.
- Precise cutting with minimal lateral thermal spread

➢ *Microdebrider Intracapsular Tonsillectomy*
Partial removal preserving tonsillar capsule.
- Reduced pain and bleeding
- Risk of regrowth

III. COMPLICATIONS

➢ *Primary Hemorrhage*
Occurs within 24 hours postoperatively, often due to surgical technique.

➢ *Secondary Hemorrhage*
Occurs 5–10 days postoperatively due to sloughing of eschar.

➢ *Pain*
A significant postoperative issue, often lasting up to 10 days.

➢ *Other Complications*
- Infection
- Velopharyngeal insufficiency
- Taste disturbance (rare)

IV. POSTOPERATIVE CARE

- Adequate analgesia (paracetamol ± NSAIDs)
- Hydration and early oral intake
- Avoidance of irritant foods
- Monitoring for bleeding

➢ *Outcomes and Evidence*
Evidence supports tonsillectomy in appropriately selected patients. Studies show:
- Reduction in frequency and severity of throat infections
- Significant improvement in quality of life
- Resolution of obstructive symptoms in pediatric OSA

However, the benefit must be balanced against surgical risks, particularly in mild cases.

V. DISCUSSION

Modern tonsillectomy practice emphasizes patient selection and technique optimization. There is increasing interest in intracapsular techniques due to improved recovery profiles. However, long-term recurrence remains a concern.

Guidelines from organizations such as National Institute for Health and Care Excellence and American Academy of Otolaryngology–Head and Neck Surgery stress evidence-based indications to avoid unnecessary surgery.

VI. CONCLUSION

Tonsillectomy remains a cornerstone procedure in otolaryngology. With evolving techniques and stricter indications, it continues to provide significant benefits in selected patients. Future research should focus on long-term outcomes and comparative effectiveness of newer surgical modalities.

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