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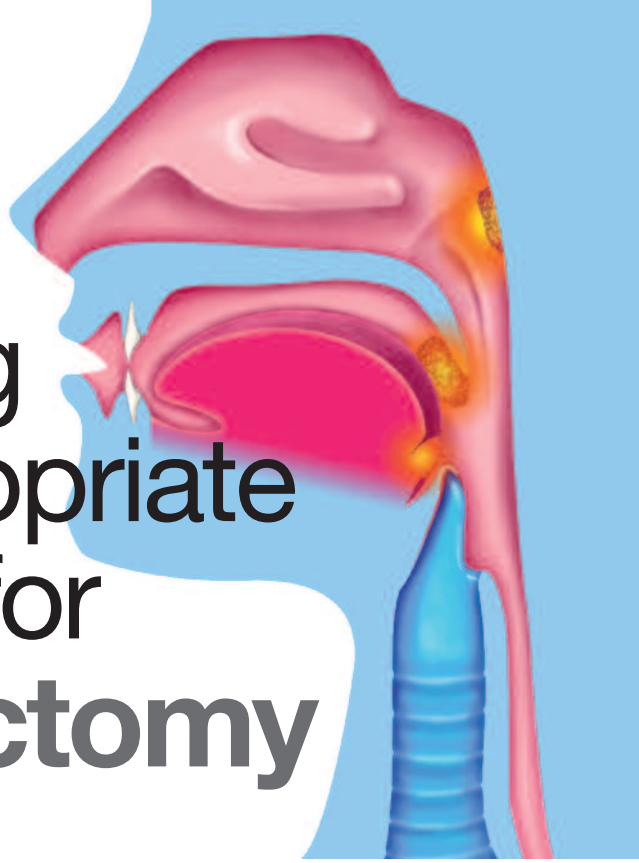

Choosing the appropriate patients for tonsillectomy

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Tonsillectomy has significant benefits when performed on appropriate patients. Indications for the surgery are clear and need to be met. Patients should be warned of the pain they will experience postoperatively.

Key points

- **Tonsillectomy is one of the most common operations performed on children in Australia.**
- **The most common indication for the procedure is an obstructive breathing pattern.**
- **Postoperative pain is almost universal. However, patient education before surgery about simple strategies for analgesia can minimise its impact.**
- **Postoperative haemorrhage is the most troublesome complication and needs to be recognised and acted on immediately.**
- **The possibility of malignancy and lymphoma need to be considered in tonsils with an atypical appearance.**

Tonsillectomy with or without adenoidectomy is one of the most common operation performed on children in the Australian community. Despite the frequency with which it is performed and its long history, debate continues about the indications for tonsillectomy and the optimal surgical technique. Although technically easy to perform, the operation often imposes significant postoperative pain on otherwise relatively well children and a significant cost burden to their carers and the healthcare system.

The purpose of this article is to inform primary caregivers about the recognised indications for tonsillectomy, details of the procedure, the anticipated postoperative course and the limitations and benefits of this operation.

FUNCTION OF THE TONSILS AND ADENOIDS

The adenoids and tonsils are part of the mucosal-associated lymphoid tissue (MALT). They are strategically positioned to sensitise against inhaled and ingested allergens. The greatest immunological activity of the adenoids and tonsils is seen in children between the ages of 3 and 10 years.[1] Although both are small at birth, they grow progressively within the first six years of life, subsequently undergoing involution. The adenoid will have completely involuted by the age of 12 to 15 years and the tonsils do diminish in size, but not to the same degree, becoming relatively smaller by the mid-teens.

There are no studies that demonstrate any significant immunodeficiency as a consequence of adenotonsillectomy. This presumably reflects the fact that lymphoid tissue remaining in the tongue base and pharynx provides similar sensitisation to ingested and inhaled allergens.

INDICATIONS FOR TONSILLECTOMY AND ADENOTONSILLECTOMY

The indications for tonsillectomy and adenotonsillectomy are obstructive sleep apnoea, recurrent acute tonsillitis, peritonsillar abscess and suspected neoplasm.

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Figure 1. Acute tonsillitis.

Figure 2. Viral pharyngitis.

Obstructive sleep apnoea

Obstructive sleep apnoea has a prevalence of 2 to 3% in children under the age of 10 years. However, 10% of children in this age group exhibit simple snoring – that is, noisy breathing without significant upper airway obstruction, hypoxia and consequent diminution of sleep quality. The challenge is, therefore, to identify and treat only those children with obstructive sleep apnoea.

No completely reliable clinical parameters exist on which to diagnose or exclude obstructive sleep apnoea in children who snore. Tonsil size correlates poorly with degree of airway obstruction. Symptoms that suggest the possibility of obstructive sleep apnoea include noisy respiration or snoring, restless sleep, nocturnal hyperhidrosis, frequent nocturnal wakening, bruxism and enuresis. Daytime symptoms vary according to the age of the child, but include behavioural problems, hypersomnolence, hyperactivity, inattentiveness, depression or anxiety and deteriorating school performance.

It should be noted too, that parents are not necessarily reliable witnesses in excluding or confirming obstructive sleep apnoea in their children, for the obvious reason that they are usually asleep during the period in which the child's airway is maximally obstructed during sleep. It is reasonable to refer to an otolaryngologist a child with extremely large tonsils who snores loudly, has any or all of the nocturnal signs indicated above, and exhibits daytime symptoms of sleep deprivation.

If there is discordance between the size of the tonsils and/or adenoids and the symptoms, polysomnography is indicated. This allows those children with obstructive sleep apnoea to be appropriately treated and the 70 to 80% of children who snore but do not require surgery to be identified.

There appear to be significant long-term sequelae of untreated moderate and severe obstructive sleep apnoea. Insufficient data exist regarding the sequelae of mild obstructive sleep apnoea. It should be recognised that not all children with obstructive sleep apnoea are cured by adenotonsillectomy, although most are improved. Those that are not cured include obese children and those with craniofacial abnormalities or neuromuscular conditions.

The primary care physician needs to be aware of obstructive sleep apnoea, because it is estimated that fewer than one in seven children with significant upper airway obstruction during sleep is being appropriately treated in Australia .[2]

Recurrent acute tonsillitis

Almost 30 years ago, Paradise and colleagues proposed guidelines for the use of tonsillectomy in cases of recurrent acute tonsillitis.[3] Subsequent studies have not detracted from their recommendations. In general, a child who experiences tonsillitis seven times in one year, five times per year for two consecutive years or three times per year for three consecutive years should be referred for adenotonsillectomy. No good data exists on the frequency of tonsillitis in adults meriting surgery.

Tonsillectomy is only of benefit for children with recurrent acute tonsillitis, and not as prophylaxis against pharyngitis associated with viral upper respiratory tract infection. The diagnosis of tonsillitis is a clinical one and, for the otolaryngologist to make a firm treatment recommendation, it is imperative that the referring primary care physician differentiates between pharyngitis and tonsillitis, and accurately documents the frequency of true acute tonsillitis.

Peritonsillar abscess

Tonsillectomy is generally not indicated for cases of peritonsillar abscess (also called quinsy) that respond to antibiotic administration and drainage. The recurrence of

a peritonsillar abscess is about 20%.[5] When recurrence occurs, the likelihood of further recurrences approaches 80%. In general, therefore tonsillectomy is indicated in patients who have experienced two or more episodes of peritonsillar abscess.

SUSPICION OF NEOPLASM

Most cases of tonsillar asymmetry do not require surgical treatment as they are due to asymmetric lymphoid hyperplasia. Squamous cell carcinoma of the tonsil has an appearance that is not easily confused with infection. Paediatric tonsil lymphoma is rare but should be suspected when there has been a short history (weeks) of growth in one tonsil with significant discrepancy in the size between the two tonsils, cervical lymphadenopathy or splenomegaly and systemic symptoms.[6]

THE TONSILLECTOMY PROCEDURE

Tonsillectomy and adenotonsillectomy in Australia are performed under general anaesthetic, generally in a facility providing overnight care. In most circumstances, patients are discharged within 23 hours after the operation.

A variety of surgical techniques exist, with debate in the literature regarding the merits and lack thereof of each technique. There is no consensus as to the optimal surgical technique. The procedure takes about 20 minutes to perform. It is a technically simple procedure, but, irrespective of the technique used, is often extremely painful and not without risk.

POSTOPERATIVE CARE

It is imperative that patients and their carers be prepared preoperatively for the degree of pain that will be expected after a tonsillectomy. Analgesia should be given regularly for up to a week after the operation. Pain fluctuates in severity, and is often worse in the morning, possibly reflecting overnight dehydration. Pain may increase in severity towards the end of the first week, with referred otalgia often a prominent complaint at that time.

Paracetamol or paracetamol with codeine are most often prescribed. Alternative analgesics such as oxycodone can be used but care must be taken to prescribe the appropriate dosage because overdosing can lead to respiratory depression. Controversy exists regarding the safety of NSAIDs, due to their effect on platelet function and the associated increase in postoperative haemorrhage rates, and in Australia their use postoperatively is uncommon.

Adequate hydration is essential, and dehydration exacerbates the pharyngeal pain. Simple sustainable hydration regimens are the easiest for patients to comply with. Regular small volumes of fluid (either water, diluted fruit juice and half-strength flat lemonade are all suitable) should be consumed, delivered as fluids, ice slurries or ice blocks. Jellies and custards are also easy to ingest. There is little need for commercial rehydration products. There are no dietary restrictions, but acidic or spicy food may exacerbate pain.

Antibiotics are inconsistently prescribed perioperatively. Reports suggest only a minor reduction in pain or no benefit at all from oral antibiotic administration. True postoperative infection of the surgical site is extremely rare. Patients and their carers should be informed preoperatively that the grey/white malodorous slough present on the tonsil fossae for the first postoperative week is normal.

Postoperatively, 10 to 14 days convalescence is advised.

COMPLICATIONS OF TONSILLECTOMY

Tonsil bed haemorrhage is the most frequent complication of tonsillectomy. Primary haemorrhage occurring within the first 24 hours is uncommon. Secondary haemorrhage often occurs between the seventh to tenth postoperative day when the eschar that forms at the tonsillectomy site separates. Bleeding then occurs from subjacent granulation tissue. Secondary haemorrhage rates vary between 0.6% and 10%, directly related to the age of the patient at tonsillectomy. Haemorrhage is more frequent in children undergoing tonsillectomy for tonsillitis than for obstructive sleep apnoea.[6]

Minor haemorrhage (blood streaking the sputum or ceasing spontaneously) does not merit intervention. More significant bleeding requires immediate presentation to the Emergency Department of a facility with an otolaryngology service. Although most cases of secondary haemorrhage cease spontaneously, and observation and support are all is that is required, it is impossible to know at the time of the bleed which haemorrhages will cease spontaneously and which will progress to life-threatening blood loss if not controlled by emergency surgery.

Other operative complications include:

- dental injury
- injury to the lip, including diathermy injury
- injury to the mouth, pharynx or temporomandibular joint
- respiratory compromise
- risks associated with general anaesthesia.

Postoperative complications other than bleeding include nausea and vomiting, dehydration, pulmonary oedema, aspiration, velopharyngeal insufficiency and nasopharyngeal stenosis.

Fatality, usually related to complications of haemorrhage, is estimated to occur in between one in 15,000 and one in 35,000 tonsillectomies, although the data in that regard is old.

CONCLUSION

Clear indications for when to perform a tonsillectomy or adenotonsillectomy exist. There are significant benefits from this surgery only when these indications are met. The surgery can be extremely painful and is not without risk. It is encumbent upon the primary care physician to be aware of the indications for this surgery and only refer for treatment those patients in whom the benefits of the surgery outweigh the risks. MT

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