



## Tonsillectomy Procedures

Unfortunately, there may be a time when medical therapy (antibiotics) fails to resolve the chronic tonsillar infections that affect your child. In other cases, your child may have enlarged tonsils, causing loud snoring, upper airway obstruction, and other sleep disorders. The best recourse for both these conditions may be removal or reduction of the tonsils and adenoids. The American Academy of Otolaryngology—Head and Neck Surgery recommends that children who have three or more tonsillar infections a year undergo a tonsillectomy; the young patient with a sleep disorder should be a candidate for removal or reduction of the enlarged tonsils.

### *The tonsillectomy today*

The first report of tonsillectomy was made by the Roman surgeon Celsus in 30 AD. He described scraping the tonsils and tearing them out or picking them up with a hook and excising them with a scalpel. Today, the scalpel is still the preferred surgical instrument of many ear, nose, and throat specialists. However, there are other procedures available – the choice may be dictated by the extent of the procedure (complete tonsil removal versus partial tonsillectomy) and other considerations such as pain and post-operative bleeding. A quick review of each procedure follows:

#### **Cold knife (steel) dissection:**

Removal of the tonsils by use of a scalpel is the most common method practiced by otolaryngologists today. The procedure requires the young patient to undergo general anesthesia; the tonsils are completely removed with minimal post-operative bleeding.

#### **Electrocautery:**

Electrocautery burns the tonsillar tissue and assists in reducing blood loss through cauterization. Research has shown that the heat of electrocautery (400 degrees Celsius) results in thermal injury to surrounding tissue. This may result in more discomfort during the postoperative period.

#### **Harmonic scalpel:**

This medical device uses ultrasonic energy to vibrate its blade at 55,000 cycles per second. Invisible to the naked eye, the vibration transfers energy to the tissue, providing simultaneous cutting and coagulation. The temperature of the surrounding tissue reaches 80 degrees Celsius. Proponents of this procedure assert that the end result is precise cutting with minimal thermal damage.

### **Radiofrequency ablation:**

Monopolar radiofrequency thermal ablation transfers radiofrequency energy to the tonsil tissue through probes inserted in the tonsil. The procedure can be performed in an office setting under light sedation or local anesthesia. After the treatment is performed, scarring occurs within the tonsil causing it to decrease in size over a period of several weeks. The treatment can be performed several times. The advantages of this technique are minimal discomfort, ease of operations, and immediate return to work or school. Tonsillar tissue remains after the procedure but is less prominent. This procedure is recommended for treating enlarged tonsils and not chronic or recurrent tonsillitis.

### **Carbon dioxide laser:**

Laser tonsil ablation (LTA) finds the otolaryngologist employing a hand-held CO<sub>2</sub> or KTP laser to vaporize and remove tonsil tissue. This technique reduces tonsil volume and eliminates recesses in the tonsils that collect chronic and recurrent infections. This procedure is recommended for chronic recurrent tonsillitis, chronic sore throats, severe halitosis, or airway obstruction caused by enlarged tonsils.

The LTA is performed in 15 to 20 minutes in an office setting under local anesthesia. The patient leaves the office with minimal discomfort and returns to school or work the next day. Post-tonsillectomy bleeding may occur in two to five percent of patients. Previous research studies state that laser technology provides significantly less pain during the post-operative recovery of children, resulting in less sleep disturbance, decreased morbidity, and less need for medications. On the other hand, some believe that children are adverse to outpatient procedures without sedation.

### **Microdebrider:**

What is a “microdebrider?” The microdebrider is a powered rotary shaving device with continuous suction often used during sinus surgery. It is made up of a cannula or tube, connected to a hand piece, which in turn is connected to a motor with foot control and a suction device.

The endoscopic microdebrider is used in performing a partial tonsillectomy, by partially shaving the tonsils. This procedure entails eliminating the obstructive portion of the tonsil while preserving the tonsillar capsule. A natural biologic dressing is left in place over the pharyngeal muscles, preventing injury, inflammation, and infection. The procedure results in less post-operative pain, a more rapid recovery, and perhaps fewer delayed complications. However, the partial tonsillectomy is suggested for enlarged tonsils – not those that incur repeated infections.

### **Bipolar Radiofrequency Ablation (Coblation):**

This procedure produces an ionized saline layer that disrupts molecular bonds without using heat. As the energy is transferred to the tissue, ionic dissociation occurs. This mechanism can be used to remove all or only part of the tonsil. It is done under general anesthesia in the operating room and can be used for enlarged tonsils and chronic or recurrent infections. This causes



removal of tissue with a thermal effect of 45-85 C°. The advantages of this technique are less pain, faster healing, and less post operative care.

Consult with your specialist regarding the optimum procedure to remove or reduce your child's tonsils and adenoids.



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