Review

"シンポジウム I 簡桃摘出術のガイドライン—日米統一"

Diagnosis of acute tonsillitis, treatment and indication for tonsillectomy in Germany

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The preferred indications for tonsillectomy are acute infections of the tonsils with repeated indication for antibiotics treatment within the last two or three years before surgery, or up to seven infections per year. Other indications are hyperplasia of the tonsils with mechanical obstruction, obstructive sleep apnea syndrome (O-SAS), occult tonsillitis or tonsil origin sepsis (phlegmonosis), tonsil origin infections (rheumatic fever, acute nephritis, pustulosis palmaris et plantaris), the suspicion of malignancy, mononucleosis, myofunctional distress of the orofacial region, suspicious bacteriology of the hyperplastic tonsils, repeated halitosis of elder children after exclusion of other causes. The main indications for tonsillectomy should prevent further distress of immune defense; indication must take clue that the tonsillectomy may prevent further infections of the upper airways and may have a positive effect on sinusitis and bronchitis. A prophylaxis for endocarditis is necessary for patients with defects of heart valve, prolaps of mitral valve and hypertrophic obstructive cardiomypathy. Antibiotic prophylaxis should be done with amoxicillin or clindamycin. The most common surgical technique is the tonsillectomy by dissection with bipolar diathermy and ligation. Other surgical procedures are surgery by laser or ablation with radiofrequencies. Complications of tonsillectomy are pain (46%), fever (24%) and postoperative bleeding (up to 12%). Bleeding can be dangerous (about 1 : 3000 up to 1 : 27000 of fatal accidents after tonsillectomy). After surgery with ligation, there may be a small risk for vascular anomalies and perforation. Early bleedings appear within the first 48 hours after surgery, late bleedings after 10 to 14 days. Other rare complications are secondary infection of the tonsillectomy zone, aspiration, dysgeusia, palsies of the hypoglossal nerve, lingual nerve or recurrent laryngeal nerves, meningitis, pharyngeal abscess, Grisel Syndrome (infection of the atlanto-axial articulation), rhinophonia aperta, velopalatinal insufficiency by sutures, dental complications, dysfunction of the myofacial articulation. Tonsillectomies in Germany are still done during hospitalization. Most of the 35,000 operations per year is done by otolaryngologists working in their own offices and in the hospital at the same time. The contact between doctor and patient is very close and it’s the same doctor who cares about ambulant and hospital treatment. The average stay in hospital after surgery is 6 to 7 days. International trends go to ambulant surgery for economical reasons. However, medical laws in Germany are quite strict and doctors who may allow their patients to leave the hospital too early have a high risk of punishment in a medicolegal follow-up after possible complications. After tonsillectomy, about 92% have less pain and health complications within four weeks.

Key words: tonsillectomy, indication, tonsillitis, complications

Introduction

The pharyngeal and palatine tonsils are parts of the tonsillar (Waldeyer’s) ring and secondary lymphatic organs, parts of the mucosa-associated lymphoid system (MALT). The palatine tonsil is an immune-receptive organ, with the capacity for antigen reception and response. The phase of immune-learning and stimulation takes place up to an age of four or five years, and immunological procedures in the tonsils seem to be quite important. There is production of IgG, IgA, IgM and IgE in
palatine tonsil. The pharyngeal tonsil seems to be bronchus-associated tissue with immunological IgA response, for example for clearing of Haemophilus influenzae in the nasopharynx. The immunological procedures are the main cause for hyperplasia of the tonsils.

The most important causative agents of acute tonsillitis are: Streptococcus Group A, Pneumococcus, Staphylococcus, Haemophilus influenzae, Mycoplasma.

For most patients, a continuous pain in the throat, even more intensive during deglutition, a limited capacity of opening mouth, sometimes with lockjaw, change of speech and halitosis are the most important functional symptoms of acute tonsillitis. Headache, acute dysphagia, elevated temperature and other local symptoms are even more signs of the acute infection, with the intensity depending on the stage of sickness. Other general changes are lack of appetite and problems with concentration, tachycardia, obstipation, anorexia and a dry throat.

The histological findings are angioectasia of the mucosa of the tonsils, leukocytes infiltrations, exudates in the crypts of the tonsils. The local lymph nodes are enlarged and tender, and the CBC shows often a leukocytosis up to 10000-12000/mm³.

The diagnosis is made by history, typical ENT findings and a general examination: CBC, examination of heart and circulation, urinalysis (nephritis), exclusion of diphtheria, mononucleosis or leukocytosis.

Important points of a general therapy for acute tonsillitis are: General rest, analgesics, diet with enough liquid and calories, antibiotics for about eight days (penicillin, cephalosporin, or macrolides), local treatment with disinfection of teeth, and no local antibiotics.

### Adenotomy

The clinical symptoms and the indications for adenotomy of hyperplastic adenoids are:

- Obstruction of nasal breathing with persistent nasal discharge
- Persistent chronic rhinitis and sinusitis
- Conductive hearing loss by OME; sero-or mucotympanum (“Glue ear”)
- Persistent otitis media
- Persistent bronchitis or nasopharyngitis
- Obstructive sleep apnea syndrome (O-SAS)

A persistent pharyngeal tonsillitis in adults without velopharyngeal problems may not be important for function. However, surgery is indicated only when a differential diagnosis should be made for carcinoma, sarcoma, craniopharyngeoma, pharyngeal bursitis (Tornwald’s disease), hemangioma, meningoencephalocele, leukemia or lymphoma cell infiltration, or Kaposi’s sarcoma (in HIV infection).

Diagnosis should be made by clinical symptoms and history, but as well with posterior rhinoscopy or flexible endoscopy.

Contraindications for adenotomy are haematological diseases with prolonged bleeding time, cheilo-gnatho-uranoschisis and a rhinolalia aperta before surgery. Palpation of the hard and soft palate are important to exclude a submucosal cleft palate. Preoperative notice should be taken about the dental chart.

There exist two standard surgical techniques:

A.) The complete curettage of the adenoids with head down position. The surgical results should be controlled with a warmed-up mirror or by endoscopy.

B.) Curettage with electrical curettage.

The main complication of adenotomy is still secondary hemorrhage within the first 24 or 48 hours. As well, there can be a velopharyngeal
insufficiency and a rhinolalia aperta. Other complications are: nasopharyngeal stenosis, Grisel-Syndrome (torticollis atlantoepistrophealis) with partial luxation of the atlas in the atlantoaxial articulation, cervical osteomyelitis, meningitis or vulnerability of the torus tubarius.

More than 90% of all operated children show a complete remission of infections and otitis media within 12 months. The rate of nasopharyngeal infections can be reduced up to 80%. The clinical symptoms are decisive about the indication for surgery.

Tonsillectomy

The preferred indications for tonsillectomy are acute infections of the tonsils with repeated indication for antibiotics treatment within the recent two or three years before surgery, or up to seven infections per year. Other indications are hyperplasia of the tonsils with mechanic obstruction, obstructive sleep apnea syndrome, occult tonsillitis or tonsil origin sepsis (phlegmonosis), tonsil origin diseases (rheumatic fever, acute nephritis, pustulosis palmaris et plantaris), the suspicion of malignancy, mononucleosis, myofunctional distress of the orofacial region, suspicious bacteriology of the hyperplastic tonsils, repeated halitosis of elder children after exclusion of other causes.

Differential diagnosis can always be hematologic malignancies (leukemia or malignant lymphoma) or a neoplasm.

When we discuss the indication for tonsillectomy, we should know that long-term studies did not show any negative effect on immune response to infection or didn’t cause any disorder of immunological response after tonsillectomy.

The main indications for tonsillectomy should prevent further distress of immune defense; indication must take care that the tonsillectomy may prevent further infections of the upper airways and may have a positive effect on sinusitis and bronchitis.

A prophylaxis of endocarditis is necessary for patients with defects of heart valve, prolaps of mitral valve and hypertrophic obstructive cardiomyopathy.

Antimicrobial prophylaxis should be done with amoxicillin or clindamycin (when an allergic reaction for penicillin exists). Antibiotics are given once before surgery, in endocarditis patients, and as a second time six hours after surgery. In Germany, the same procedure is proposed for children.

The most common surgical technique is the tonsillectomy by dissection with bipolar diathermy and ligation. Other surgical procedures are surgery by laser or ablation with radiofrequencies. Guillotine tonsillectomy is not common in Western European countries. A bipolar coagulation (diathermy) for primary and secondary haemorrhage is more popular than a ligation of the bleeding vessels.

Complications of tonsillectomy are: pain (46%), fever (24%) and postoperative bleeding (up to 12%). Bleeding can be dangerous (about 1:3000 up to 1:27000 of fatal accidents after tonsillectomy). After a ligation, there may be a small risk for vascular anomalies and perforation.

Children have to be treated with special care and indirect signs of secondary haemorrhage like cough, haematemesis, emesis and shock are very important for the indication for secondary surgery. Early bleedings appear within the first 48 hours after surgery, late bleedings after 10 to 14 days. Risk of bleeding after surgery corresponds with sex (2:1 males), the intraoperative bleeding and use of vasoconstrictive agents during surgery.

Other rare complications are secondary infection of the tonsillectomy zone, aspiration, dysgeusia, paresis of the hypoglossal nerve, lingual
nerve or recurrent laryngeal nerve, meningitis, pharyngeal abscess, Grisel Syndrome (infection of the atlanto-axial articulation), rhinophonia aperta, velopharyngeal insufficiencies by sutures, dental complications, dysfunction of the myofacial articulation.

Tonsillectomy in Germany is still done during hospitalization. Most of the 35,000 operations per year are done by oto-rhino-laryngologists working in their own offices and in the hospital at the same time. The contact between doctor and patient is very close and it's the same doctor caring about ambulant and hospital treatment. The average stay in hospital after surgery is 6 to 7 days. International trends go to ambulatory surgery for economical reasons. However, medical laws in Germany are quite strict and doctors who may allow their patients to leave the hospital too early have a high risk of punishment in a medicolegal follow-up after possible complications. In other European countries like Denmark and Sweden, tonsillectomy is done with a hospitalization for 2 days; complications like secondary haemorrhage count as medical accidents and are covered by special foundations of the social security system. During my visit in New Zealand in March and April 2003, I learned from New Zealand otolaryngologists that tonsillectomy in the Southern Island (only 800,000 people in 110,000 km²) is done in big 38-ton vans with complete surgical units inside. Those vans are driven from village to village where generalists and otolaryngologists decide the indication beforehand.

Only two cases of mortality due to secondary bleeding within 24 hours in the last four years were reported. After tonsillectomy, about 92% of the patients have less pain and health complications within four weeks.