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## Incidence of Tonsillectomy Complications (A 10-Year Study of 4042 Cases)

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### ABSTRACT

**Background:** According to the prevalence of tonsillectomy, this study was performed to evaluate the complications in patients that had referred between the years 1989 and 1998.

**Materials and Methods:** This was an observational retrospective study performed on 4042 patients who underwent tonsillectomy during 10 years. (From those, 2708 cases underwent surgery in one center and the remaining 1324 cases underwent tonsillectomy in another center by otolaryngologists). Records of the patients in both groups were surveyed in regard to complications.

**Results:** A total number of 113 (2.79%) patients had complications. Complications were mostly seen in the age group of 5-9 years. The most common complication was bleeding which occurred in 59 patients (1.46%). Other complications in order of prevalence were clot formation or hematoma in the tonsillar fossa, tongue and soft palate edema, airway obstruction, hoarseness, persistent vomiting, infection of the parapharyngeal space, dental complications, remaining of a broken needle in tonsillar fossa, and death.

**Conclusion:** According to the high prevalence of tonsillectomy in our country and high rate of bleeding and its related risks which may even lead to death and also the role of skill and attention of the surgeon and anesthesiologist during surgery and postoperative care in recovery room and in the ward, it is recommended for the surgeon to consider all of the related cares and perform surgery after acquiring the necessary skill with the help of an expert anesthesiologist to minimize the complications. (Tanaffos 2004; 3(11): 65-69)

**Key words:** Tonsil, Tonsillectomy, Complication

### INTRODUCTION

Tonsillectomy is still one of the most common pediatric surgeries, as in the United States more than 390000 surgeries are performed per year (1).

The aim of this surgery is to remove tonsil with

minimal bleeding, minimal trauma to the adjacent tissues and minimal complications (2).

Although in order to achieve this goal many different methods such as blunt dissection and cutting the tonsillar base by snare, dissection with electrocautery and laser surgery have been named but in many centers the surgeons still believe that

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tonsillectomy with blunt dissection and cutting the tonsil with snare is the best method (3).

The surgeon's skill plays an important role in this method. In some articles, this operation is defined as an outpatient surgery with 4-6 hours care in the recovery room but in most cases it is recommended to keep the patients in the hospital overnight (1,4).

Complications of the surgery are as follow:

Pain, bleeding, airway obstruction, pulmonary edema, uvulo-pharyngeal insufficiency, nasopharynx stenosis, lung abscess, Horner's syndrome, optic neuritis, meningitis, septicemia, cerebral abscess, glossopharyngeal nerve palsy, recurrent laryngeal nerve palsy, salivary fistula from the submaxillary gland to the tonsillar fossa, mediastinitis, subcutaneous emphysema, pulmonary emphysema, Eagle syndrome, foreign bodies aspiration such as extracted teeth, gauze or lymphatic tissues, cervical vertebrae complications such as Grisel syndrome, retropharyngeal abscess, amputation of the uvula, trauma of the anterior and posterior pillars, lingual artery pseudoaneurysm, necrotizing fasciitis and death (2-8). The most common complication of the surgery is bleeding (9). This research was conducted as a retrospective study in patients who underwent tonsillectomy in a 10-year period to evaluate the prevalence of tonsillectomy and determining the influence of skill, experience and attention of the surgeon and anesthesiologist in reducing the complications.

## **MATERIALS AND METHODS**

This was a retrospective study performed on patients who underwent tonsillectomy in two different centers during the years 1989 to 1998. The total number of patients was 4042 persons. Preoperative evaluations, method of surgery and

anesthesia, and postoperative follow ups were the same.

All patients in both groups underwent blunt dissection method, cutting the base of tonsil by snare, and suturing the bleeding area. Patients were followed for 3 weeks in regard to complications.

A total of 113 patients (2.79%) had complications. The age range of patients was 1.5 to 68 years. The most common complication was bleeding, which occurred in 59 patients (1.46%).

Most of the complications occurred between the ages of 5-9 years. Out of 59 patients who had bleeding, 43 cases (68.2%) had early bleeding (in the initial 24 hours after the surgery), 14 cases (22.3%) had late bleeding (after the first 24 hours of the operation) 4 cases (6.3%) had bleeding during the surgery and 2 cases (3.2%) had bleeding at the time of intubation. Three cases had both early and late bleeding and one case had bleeding during and after the operation. Twenty one (35.6%) patients who had bleeding required reoperation at the operating room and under general anesthesia.

It should be mentioned that in one case we had to ligate the external carotid artery to stop bleeding and unfortunately late bleeding in one case led to death as a result of delayed referral to the hospital. He died before anything could be done.

Other complications in order of prevalence were: clot formation or hematoma in the tonsillar fossa in 24 cases (59%), tongue and soft palate edema in 9 cases (21%), airway obstruction in 6 cases (14%), hoarseness in 4 cases (9%), persistent vomiting in 3 cases (7%), infection of the parapharyngeal fossa in 2 cases (4%), dental complications in 2 cases (4%), leaving the broken needle in tonsillar fossa in 2 cases (4%), anesthetic complications in 1 case (2%), and death in 1 case (2%) (Table 1).

**Table 1.** Frequency distribution of tonsillectomy complications in 4042 cases.

Type of complication	Number (%)
Bleeding	59 (1.46)
Clot formation (Hematoma of the tonsillar fossa)	24 (0.59)
Tongue and soft palate edema	9 (0.21)
Airway obstruction	6 (0.14)
Hoarseness	4 (0.09)
Persistent vomiting	3 (0.07)
Infection of the parapharyngeal space	2 (0.04)
Dental complications	2 (0.04)
Broken needle in the tonsillar fossa	2 (0.04)
Death	1 (0.02)

## DISCUSSION

Tonsillectomy is still one of the most common surgeries in children (1).

Its various complications specially bleeding which is the most common complication has caused the otolaryngologists to name this surgery easy yet difficult operation and it can be very complicated and dangerous in some cases.

In a study performed by Lacarte et al. whose results were published in the year 2000, tonsillectomy is defined as an outpatient surgery (1).

In another research that carried out by Sie Kc et al. they recommended to perform tonsillectomy as outpatient only when 4 to 6 hours of postoperative care in recovery room is feasible (4).

However, most of the otolaryngologists prefer to hospitalize the patient in the hospital for tonsillectomy because of its complications (2, 8).

Pain after surgery is one of the common complaints in patients, which increases by aging.

Many sedative tablets have been recommended to relieve pain. In a research conducted by Tawalbeh et al., they preferred diclofenac sodium to paracetamol, (10) and indicated that diclofenac sodium has

positive effect on relieving pain during swallowing after tonsillectomy (10).

The most common complication is bleeding but different complications may occur.

Some rare complications such as meningococcal septicemia (5), pseudoaneurysm of the lingual artery (6), and necrotizing fasciitis (7) have been reported.

Careful evaluations before the operation, clinical history and obtaining routine coagulation test have positive effect on reducing the bleeding during surgery (11).

Adrenaline injection at the time of operation can play an important role in reducing bleeding and decreasing the time of surgery (12).

Although many different methods have been advocated for this surgery, blunt dissection, cutting the base of tonsil by snare, and suturing the bleeding area is still the best method of tonsillectomy (2).

However, skill of the surgeon plays an important role in reducing the complications. As we mentioned above, the most common complication was bleeding which had occurred in 59 (1.46%) cases.

Fortunately most of them were controlled. Other complications had less incidence. Death happened only in one case, which was due to the late arrival to the hospital.

Risk of complications was higher in the age range of 5-9 years. Therefore, more attention must be paid at the time of tonsillectomy in this age group.

Careful evaluations before the surgery, skill and attention of the surgeon and anesthesiologist at the time of surgery, postoperative cares in the recovery room and ward, proper nutritional diet, as well as regular and periodic follow ups of the patients for 3 to 4 weeks after the operation can decrease the risk of tonsillectomy.

Bleeding which is the most common complication of the tonsillectomy, if treated in time can highly decrease the risk of its related dangers.

## REFERENCES

1. Rivas Lacarte M. [Tonsillectomy as a major outpatient procedure. Prospective 8-year study: indications and complications. Comparison with inpatients]. *Acta Otorrinolaringol Esp* 2000; 51(3): 221-7.
2. Cummings, Charpes Fredrickson, John Harker. Lee Krause, Charles Schuller-Text Book of Otolaryngology. Third Edition. Mosby 1997, 1475-95.
3. Linden BE, Gross CW, Long TE, Lazar RH. Morbidity in pediatric tonsillectomy. *Laryngoscope* 1990; 100 (2Pt1): 120-4.
4. Sie Kc. The risk of postoperative Hemorrhage in Tonsillectomy asan outpatient peocedure in children. *Int J Pediatr Otorhinolaryngol* 1997; 41 (1): 29-39.
5. Guirguis M, Berkowitz RG. Meningococcal septicemia post adenotonsillectomy in a child: case report. *Int J Pediatr Otorhinolaryngol* 2001; 57 (2): 161- 4.
6. Menauer F, Suckfull M, Stabler A, Grevers G. [Pseudoaneurysm of the lingual artery after tonsillectomy. A rare complication]. *Laryngorhinootologie* 1999; 78 (7): 405-7.
7. Feinerman IL, Tan HK, Roberson DW, Malley R, Kenna MA. Necrotizing fasciitis of the pharynx following adenotonsillectomy. *Int J Pediatr Otorhinolaryngol* 1999; 48 (1): 1-7.
8. Paparella & Shumrick. Text Book of Otolaryngology. 4 ed, W.B Saunders, 1997- vol 3. p 2027-48.
9. Handler SD, Miller L, Richmond KH, Baranak CC. Post-tonsillectomy hemorrhage: incidence, prevention and management. *Laryngoscope* 1986; 96 (11): 1243-7.
10. Tawalbeh MI, Nawasreh OO, Husban AM. Comparative study of diclofenac sodium and paracetamol for treatment of pain after adenotonsillectomy in children. *Saudi Med J* 2001; 22 (2): 121-3.
11. Gabriel P, Mazoit X, Ecoffey C. Relationship between clinical history, coagulation tests, and perioperative bleeding during tonsillectomies in pediatrics. *J Clin Anesth* 2000; 12(4): 288-91.
12. Safavi Naini A, Nadafi S. The effect of adrenaline injection in tonsillectomy. *Pejouhandeh* 1995.