

Tonsillectomy at the ENT Department of the National Hospital Donka and Review of the Literature

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Abstract

Introduction: Our objective was to present our experience regarding the indications, surgical techniques, and postoperative outcomes of tonsillectomy in the ENT Department of the National Hospital Donka. **Materials and Methods:** This was a descriptive and retrospective study conducted over a period of 5 years (from January 1, 2018, to December 31, 2022) in the ENT Department of the National Hospital Donka in Conakry. We included 143 male and 157 female patients, all of whom underwent extracapsular tonsillectomy using electrocautery dissection. We analyzed age, sex, surgical indications, type of surgery, and postoperative outcomes. **Results:** We recorded 300 tonsillectomies, representing 30.55% of all surgeries. The mean age of the patients was 13.85 ± 9.57 years. The 0 to 15-year age group accounted for 55.67%, followed by the 16 to 30-year group (35.67%). The indications included recurrent tonsillitis (38%), chronic and caseous tonsillitis (30%), obstructive tonsillitis with obstructive sleep apnea syndrome (OSA) (20%), complications related to rheumatic fever (RAA), acute glomerulonephritis (AGN), and peritonsillar abscess (10.6%), and suspected malignancy of the palatine tonsil (0.3%). Postoperative recovery was uncomplicated in 93% of cases. Seven cases of hemorrhagic complications were reported (2.3%). Other complications included nasal regurgitation (1.7%), dysgeusia (1.3%), and suppuration of the tonsillar fossae (1.3%). No deaths were recorded. **Conclusion:** Tonsillectomy is a common procedure in the ENT Department of the National Hospital Donka in Conakry. Recurrent tonsillitis is the main indication. Electrocautery dissection is the technique used. Hemorrhagic complications can be minimized by improving intraoperative hemostasis.

Keywords

Tonsillectomy, Indications, Techniques, Complications

1. Introduction

Tonsillectomy refers to the surgical removal of the palatine tonsils. Along with adenoidectomy, it is one of the most commonly performed ENT procedures in both children and adults in our context [1] [2]. The tonsils, as part of Waldeyer's lymphatic ring, play a role in the immune defense system and are frequently affected by viral and bacterial infections. Tonsillectomy is often required in cases of chronic infection, obstructive hypertrophy, or local complications such as peritonsillar abscess, as well as distant complications involving the kidneys, heart, or joints [3]. The indication for tonsillectomy remains a subject of debate among healthcare professionals. However, in the literature, chronic upper airway obstruction resulting in obstructive sleep apnea syndrome (OSAS) is the leading surgical indication. Some authors from sub-Saharan Africa report recurrent tonsillitis as the main indication in up to 85% of cases [4]. Other indications include tonsillar hypertrophy with or without sleep apnea, recurrent tonsillitis, chronic tonsillitis, and unilateral tonsillar enlargement suspicious for malignancy [5]. Like adenotonsillectomy, tonsillectomy can lead to complications, with postoperative hemorrhage being the most common [5] [6]. We report a series of patients operated on in the ENT department of Donka National Hospital, with the aim of presenting our experience regarding the indications, techniques, and postoperative outcomes of tonsillectomy, and placing our results in the context of existing literature.

2. Materials and Methods

This was a descriptive study with retrospective data collection conducted over a 5-year period, from January 1, 2018, to December 31, 2022, in the ENT Department of the National Hospital Donka in Conakry. The medical records of patients who underwent tonsillectomy and/or adeno-tonsillectomy were reviewed. The study focused on epidemiological aspects, surgical indications, techniques used, postoperative outcomes, and overall evolution. The parameters analyzed included age, sex, surgical indication, type of procedure performed, and morbidity.

We defined recurrent tonsillitis based on the frequency of episodes per year as follows:

- In children: 5 to 6 episodes of tonsillitis per year
- In adults: 3 to 4 episodes of tonsillitis per year

Postoperative complications were classified as:

- Immediate complications: occurring within the first 24 hours after surgery
- Secondary complications: occurring more than 24 hours after surgery

Surgical technique

The patient was positioned supine on the operating table with orotracheal in-

tubation. The head was placed in hyperextension. We then installed the Boyle-Davis mouth gag, suspended on a stand serving as a “silent assistant”, on which the surgical instruments were placed. Tonsillectomy was performed by extracapsular dissection using an electric scalpel.

An arc-shaped incision of the mucosa was made inside the anterior pillar with the electric scalpel, extended to the upper pole of the tonsil until the cleavage plane was identified. This plane was followed until the complete release of the tonsil. Hemostasis was performed progressively, and finally, the remaining pedicle was sectioned with the same electric scalpel.

Data were analyzed using EPI Info software version 7.2.

3. Results

3.1. Epidemiology

We recorded 300 tonsillectomies out of a total of 982 patients who underwent ENT surgery, representing 30.55%. The mean age was 13.85 years \pm 9.57, with a range from 2 to 47 years. There were 143 male patients (48%) and 157 female patients (52%), with a sex ratio of 0.91. The age group 0 to 15 years represented 55.67%, followed by the 16 to 30 years group (35.67%). Notably, one 47-year-old patient underwent tonsillectomy for a palatine tonsil suspected of malignancy. The distribution of patient age groups is shown in **Table 1**.

Table 1. Age groups of the patients.

	Number of Patients	Percentage
0 - 15	167	55.7
16 - 30	107	35.7
31 - 45	22	7.3
46 - 60	3	1.0
61 and above	1	0.3
Total	300	100

3.2. Indications

The indications for tonsillectomy in the patients are presented in **Table 2**.

Table 2. Indications for tonsillectomy in patients.

	Number of Patients	Percentage
Recurrent tonsillitis	114	38.0
Chronic tonsillitis	90	30.0
Obstructive tonsillitis with OSA	60	20.0
Distant complications (Rheumatic fever, Acute glomerulonephritis with positive proteinuria)	32	10.6
Peritonsillar abscess	3	1.0
Suspected malignant palatine tonsil	1	0.3

In 108 patients (36%), tonsillectomy was combined with adenoidectomy.

3.3. Postoperative Outcomes

The length of hospital stay was two days for 180 patients (60%), one day for 107 patients (35.6%), and three days for 13 patients (4.3%). In the absence of complications, patients were followed up after discharge on postoperative days 7 and 14, then weekly until day 30.

Nutritional intake was gradually reintroduced as follows:

- Days 0 - 1: cold or iced liquid diet
- Days 2 - 3: warm semi-liquid diet
- From Days 4 - 5: return to regular diet depending on patient tolerance

In this series, postoperative recovery was uneventful in 280 patients (93%), while 20 patients (7%) experienced complications. The reported complications included hemorrhage (2.3%), nasal regurgitation of food (1.7%), dysgeusia (1.3%), and suppuration of the tonsillar fossae (1.3%). No cases of death were recorded. The observed complications were not related to adenoidectomy in cases where adenotonsillectomy was performed. The hemorrhagic complication was reported in 7 patients. Among them, 4 cases occurred immediately after leaving the operating room and required surgical re-intervention, during which hemostasis and suturing of the tonsillar fossae were performed using Vicryl 2/0. In the remaining 3 patients, hemorrhage occurred secondarily on the 7th, 8th, and 11th postoperative days. These patients received intravenous hemostatic agents, followed by the administration of ice chips to suck on. In cases where the hemorrhage persisted, cauterization with a silver nitrate stick was used. The outcome was marked by cessation of bleeding without recurrence. The suppuration of the tonsillar fossae resolved favorably within three days.

4. Discussion

In our study, tonsillectomy was a frequent procedure, accounting for 30.55% of all surgical interventions. This rate was similar to that reported by Téa *et al.* [6] in Abidjan (29.70%) and Kimmo [7] in Canada (30.5%). However, it was lower than those reported by most other authors: Djoumou *et al.* [8] in Yaoundé (54.06%), Njock *et al.* [9] in Douala (82.30%), and Illé S *et al.* in Niger (42.91%). In Dakar, Abdou Sy *et al.* reported an even higher frequency of 71%. Our results may be explained not only by a lack of patient information but also by cultural beliefs and traditions that lead some individuals to refuse surgery, especially when it must be performed under general anesthesia. The 0 to 15-year age group was the most represented in our series. This finding is consistent with reports from most other authors [1] [2] [8] [9]. It may be due to the fact that infections of the lymphatic structures in Waldeyer's ring begin at a very young age during the child's adaptation period, while some children do not undergo tonsillectomy during this stage. Thus, the evolution in these children often leads to recurrent superinfections, resulting in repeated acute episodes that may progress to chronic tonsillitis in adulthood [1]. We found a female predominance with a sex ratio of 0.91. This finding

is consistent with some studies [6] [10] [11], whereas others reported a male predominance [1] [2] [12], without identifying any sex-related factors. Recurrent tonsillitis (38%) was the most frequent indication in our series. This can be explained by our patients' exposure to pathogenic agents (bacteria and viruses) and their vulnerability [2]. This frequency was lower than those reported by Téa [6] and Illé S [2], with 56.6% and 46.6% respectively, as well as in the study by Thiam *et al.* [8], where infectious indications included recurrent tonsillitis and chronic tonsillitis. In our study, obstructive tonsillitis with OSA (obstructive sleep apnea syndrome) was found in 20% of cases. Clinical signs of this syndrome include night sweats, breathing pauses, mouth breathing, restless sleep, irritability, or fatigue upon waking. Polysomnography is an important tool to establish the diagnosis and severity of obstructive sleep apnea syndrome (OSA). In the absence of this equipment in our department, we diagnose OSA clinically [8]. Chronic respiratory obstruction is related to tonsillar hyperplasia because during sleep, the relaxation of the upper airway muscles leads to increased resistance to airflow [1]. OSA may be associated with or without obstructive hypertrophy of the palatine tonsils [1] [11]. Twenty percent of the indications for tonsillectomy in our series were related to obstructive tonsillitis, which is lower than the proportions reported by other authors [1] [2] [6]. According to Parker [13], chronic respiratory obstruction accounts for 70 to 80% of tonsillectomy indications. In the study published by Téa *et al.*, respiratory obstruction represented 43%, while in the series by Abdou Sy *et al.* [1] (50.6%) and Ahmed *et al.* [11] (68.7%), this indication was even higher. Respiratory obstruction is therefore the most frequent surgical indication reported in the literature, unlike in our series. The other indications were related to complications in 11.6% of cases (Rheumatic fever, acute glomerulonephritis, peritonsillar abscess), and in one case, a tonsillectomy was performed due to a palatine tonsil suspected of malignancy. Tonsillectomy by dissection with an electric scalpel was performed on all our patients. This technique allows for precise dissection of the tonsil and meticulous hemostasis under general anesthesia and is better suited to our technical facilities. It was the same technique used in the study published by Abdou Sy *et al.* [1]. In fact, there are several tonsillectomy techniques, including the Hurd dissector technique with the use of a tie, the electric scalpel, and the Sluder technique. In Europe, other emerging techniques such as radiofrequency, microdebrider, and laser dissection are now being used to perform minimally invasive surgery. However, tonsillectomy techniques under local anesthesia carry more risks, including hemorrhage, blood inhalation, residual tonsil tissue, food trapping in the fossae, infection, and dysgeusia [8] [14]. The hemorrhagic complication was reported in 2.3% of cases, followed by food regurgitation through the nose (1.7%) in our series. The food regurgitation resolved spontaneously and was likely related to injury of the soft palate pillars during the procedure. In 4 patients, hemorrhage occurred in the immediate postoperative period, with 2 cases requiring a return to the operating room where, after achieving hemostasis, the tonsillar fossae were sutured with Vicryl 2/0. The occurrence

of this complication is likely due to inadequate hemostasis during surgery. For 3 other patients, the hemorrhagic complication occurred during the secondary post-operative period, specifically on the 7th, 8th, and 11th days after surgery, at the time of scab shedding. Early resumption of solid food intake, nose blowing, and throat clearing were possible causes triggering this bleeding from the tonsillar fossae. The administration of hemostatic agents, cauterization of the fossae with silver nitrate, and ice to suck on by the patient helped stop the bleeding. According to the literature, the rate of hemorrhagic complications varies between 0.5% and 10% depending on the studies [15]. The frequency of hemorrhage in our series was higher than that reported by some African authors [1] [2] [6] but much lower than in the study published by Kimmo *et al.* [7] in Canada in 2017, where the rate of hemorrhagic complications was 12%. We also found suppuration of the tonsillar fossae and dysgeusia in 1.3% of cases each. Dysgeusia is related to injury of the glossopharyngeal nerve due to its proximity to the lower pole of the tonsil [8]. Resolution of dysgeusia varied among patients, occurring between 3 to 6 months postoperatively in our series. The suppuration resolved favorably within three days following mouth rinses and local application of throat spray. There were no deaths reported in this study.

5. Limitations

Our study has a notable limitation, as the diagnosis of obstructive sleep apnea syndrome (OSAS) was made clinically due to the absence of a polysomnograph in our department.

6. Conclusion

Tonsillectomy is a common surgical procedure in our department, with recurrent tonsillitis being the main indication, followed by chronic respiratory obstruction. The electrocautery dissection technique is best suited to our technical facilities. Hemorrhagic complications can be reduced by strengthening hemostasis and increasing the frequency of follow-up checks postoperatively. Education and awareness-raising among the population about the risk factors for tonsillitis, as well as adherence to dietary restrictions after tonsillectomy, can reduce infections and postoperative complications.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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