The Egyptian Journal of Hospital Medicine (July 2025) Vol. 100, Page 4215-4218

How to Get a Comfortable Tonsillectomy?

Abdel L Atiff Al Rasheedy, Heba Abd El Raheem, Anwar Abdel Aty, Ahmed Mohamed Omer Nasef *
Otorhinolaryngology Surgery Department, Faculty of Medicine, Menoufia University, Menoufia, Egypt
***Corresponding Author:** Ahmed Mohamed Omer Nasef**, Email:** ahmedmomar75@gmail.com

ABSTRACT

Background: The whole removal of the tonsil and its capsule from the peritonsillar region is known as a tonsillectomy. Complications during and after surgery are also linked to tonsillectomy.

Objectives: This study aimed to evaluate preventative measures for tonsillectomy complications.

Patients and methods: This retrospective analysis was conducted on 400 tonsillectomy cases who were Egyptian pediatrics. According to tonsillectomy techniques, cases were split into two cohorts: cohort 1 (n= 200) had cold steel dissection, while cohort 2 (n= 200) received bipolar diathermy. Careful dissection, the absence of sepsis, early gargling (aspirin gargling), and consuming lots of fluids can all help prevent sore throats after tonsillectomy. It is important to encourage cases to speak in their own voice. Semiliquids, ice cream, jellies, and junk food are said to be among the most soothing since they readily slide down the throat.

Results: Compared to bipolar diathermy, cold steel dissection had a considerably longer operating time ($P<0.001$)**.** Compared to bipolar diathermy, cold steel dissection caused substantially more hemorrhage ($P<0.001$). Bipolar diathermy caused much more pain than cold steel dissection ($P<0.001$). Compared to cold steel dissection, bipolar diathermy had a significantly increased infection rate ($P<0.001$) and caused noticeably more tissue injury ($P<0.001$).

Conclusion: With a longer operation duration and a higher rate of bleeding in cold steel dissection, our research demonstrated the notable variations in surgical outcomes between bipolar diathermy and cold dissection in tonsillectomy. The bipolar diathermy cohort had markedly higher levels of pain, infection, and tissue damage.

Keywords: Comfortable tonsillectomy, Cold steel dissection, Bipolar diathermy, Complications.

INTRODUCTION

A common treatment is tonsillectomy, which involves removing the tonsil and its capsule entirely from the peritonsillar region. Tonsillectomy has the same intra-operative and post-operative risks as any other surgical surgery. There have been reports of problems with intra-operative anesthesia and surgeons, including tooth trauma, difficult intubation, laryngospasm, and damage to nearby anatomical tissues. Other less serious side effects in the first two weeks following the procedure include halitosis, referred otalgia, odynophagia, dysphagia, nausea, vomiting, and pain at the surgical site. Later, post-obstructive pulmonary edema, velopharyngeal insufficiency, and nasopharyngeal stenosis have also been documented [(1)].

Regular use of post-operative antibiotics was considered necessary because it was widely believed that an open tonsillectomy wound or exposed tonsillar bed/fossa acts as a nidus for bacterial growth in the oral cavity and may cause an exaggerated inflammatory response that worsens postoperative morbidity in these cases [(2)].

Both amoxicillin and clavulanic acid have a wide range of antibacterial activity and are B-lactamase stable antibiotics. When it comes to the common pathogens that cause chronic recurrent tonsillitis, it is very effective. With its pharmacological properties and microbiological efficacy against oropharyngeal bacteria, ceftriaxone is a parental expanded-spectrum cephalosporin that is especially well-suited for treating acute otitis media that has not responded to prior treatment [(3)].

A relatively comfortable throat following the procedure is mostly dependent on meticulous dissection and the lack of sepsis. For the reasons mentioned, attempt to keep the case away from any morphia compounds when they go back to bed. Gargling early is necessary to keep the throat clear and pain-free and to avoid any subsequent constriction. The best local anesthetic for raw fossa is an aspirin gargle, which is safe to ingest in little doses. Gargling is a secret that involves putting the head back and taking only a tablespoon at a time [(4)].

Rose's lime juice is among the most reassuring when it comes to diet and drinking lots of water. When ice cream comes into contact with an exposed nerve ending, it is quite likely to cause just little pain. A creamy pabulum is often left in the throat after eating ice. Semi-liquids, junkets, and jelly easily slide down the throat [(5)]. The goal of encouraging cases to utilize their voice is to keep their pharynx mobile by chatting or reading aloud, but naturally, they shouldn't become too tired. The case is constantly urged to take care of his throat normally rather than letting it stay stiff and inactive [(6)].

Effectiveness of one-day postoperative prophylaxis: Research has shown that a one-day course of intravenous antibiotic prophylaxis, along with two doses (every 12 hours) of dexamethasone, an apotent anti-inflammatory, antiallergic, antipyretic, and analgesic agent, is more advantageous than a seven-day course of oral antibiotics and analgesics taken after surgery. This combination works very well to reduce soft palate swelling, discomfort, and infection. It is especially helpful in easing these uncomfortable

Received: 30/04/2025
Accepted: 30/06/2025

symptoms during the first three days after the treatment. So, this work aimed to assess the strategies that can be taken to prevent post-operative tonsillectomy complications.

PATIENTS AND METHODS

This retrospective analysis was conducted on 400 tonsillectomy Egyptian pediatrics cases.

Inclusion criteria: Kids and teenagers undergoing tonsillectomy who had a history of recurrent tonsillitis, or sore throats with fever.

Exclusion criteria: Pediatrics who had acute infections (such as a throat infection or an active fever) that needed antibiotic treatment before surgery, or who had uncontrolled systemic illnesses (such as diabetes or heart disease) or other conditions that preclude surgery.
Cohorting: Cases were divided into 2 equal cohorts according to the tonsillectomy techniques**:**
Cohort 1 (n= 200): underwent cold steel dissection.
Cohort 2 (n= 200): underwent bipolar diathermy.
Every case had their complete medical history taken, including demographics (gender & age) current medical history, including the chief complaint (duration, onset, progression, severity and aggravating and alleviating factors), past medical, surgical and medication history, complete general examination of appearance and vital signs (blood pressure, heart rate, respiratory rate & temperature), local examination of the head and neck (oropharynx, nasopharynx and palpation for cervical lymphadenopathy), ear for signs of otitis media or other ear abnormalities, laboratory tests, including CBC, random blood glucose level, urine analysis, liver and renal function tests, coagulation profile, and specific laboratory investigations like electrolytes and blood gases.

Tonsillectomy techniques:
Cold dissection tonsillectomy: The day of admittance was the day of surgery. The process started with identifying the peritonsillar space, which was then cut with the tip of sharp-pointed scissors and placed beneath the tonsil's surrounding mucosa of the anterior faucial pillar. About 2 mm from the tonsil itself, the mucosa surrounding it was cut. A blunt dissector was used to enter and enlarge the peritonsillar gap between the superior constrictor muscle and the tonsillar capsule. Using a cotton piece on an artery forceps, the blunt dissection proceeded downward in the same plane until the tonsil was detached from its bed, with the exception of the lower pole, which was then clamped and removed. Prior to removing the clamp, the lower pole was ligated using a vicryl suture (00). A cotton swab was used to temporarily compress the tonsillar fossa until the other tonsil was removed. The opposite side underwent the same process. Both tonsils were removed, cotton swabs were taken out and either ligature was used to stop the bleeding.

Electrocautery tonsillectomy: The fascial plane medial to the tonsil capsule was accurately dissected using the Bovie handpiece. The Bovie handpiece, which was adjusted at 10 to 15 W to prevent muscle charring, was used to remove the tonsil's inferior pole. Packing the tonsillar fossae was usually not necessary because the bleeding was usually modest. Any exposed vessels or bleeding spots were meticulously cauterized at a setting of 30 to 35 W at the conclusion of the treatment.

Postoperative: Following surgery, cases were given a prescription for either amoxicillin or a placebo, which they were to take three times a day for a week. Complications such as severe bleeding that would necessitate readmission and blood transfusion, or a return to the operating room were tracked during postoperative emergency department visits. There were two types of bleeding: primary, which happened within 24 hours, and secondary, which happened after 24 hours. It was noted how long it took cases to return to a regular diet, which usually took five to ten days following surgery. Up to 70% of pediatrics may experience symptoms including nausea and vomiting without using preventative antiemetics, according to data on case symptoms. During the first week, analgesic use was recorded, including acetaminophen provided upon discharge and narcotic analgesics given by weight.

Ethical Approval: The parents or cases gave their written, informed consent. The research was carried out with permission from Menoufia University's Faculty of Medicine Ethics Committee. The study was conducted in accordance with the Declaration of Helsinki.

Statistical analysis
SPSS version 27 was used for statistical analysis (IBM©, Chicago, IL, USA). Histograms and the Shapiro-Wilks test were employed to assess the data distribution's normality. ANOVA (F) test with post hoc test (Tukey) was used to evaluate quantitative parametric data, which were displayed as mean and standard deviation (SD). The Chi-square test was used to examine the qualitative variables, which were displayed as frequency and percentage (%). It was deemed statistically significant when the two-tailed P value ≤ 0.05.

RESULTS

Regarding type of surgery, cold steel dissection was done in 200 (50%) cases, bipolar diathermy was done in 200 (50%) cases **(Table 1).**

Table (1): Type of surgery of the studied cases

		N = 400
Type of surgery	**Cold steel dissection**	200 (50%)
	Bipolar diathermy	200 (50%)

Data are presented as frequency (%).

Time of operation was significantly higher in cold steel dissection than bipolar diathermy (P<0.001) (Table 2).

Table (2): Time of operation of the studied cohorts

	Cold steel dissection (n=200)	Bipolar diathermy (n=100)	P
Time of operation (min)	37.8 ± 5.82	22.9 ± 5.83	**<0.001 ***

Data are presented as mean ± SD. **P1:** comparison with cold steel dissection, **P2:** comparison with bipolar diathermy, **P3:** comparison with monopolar diathermy.

Compared to bipolar diathermy, cold steel dissection caused substantially more hemorrhage (P<0.001). Bipolar diathermy caused much more pain than cold steel dissection (P<0.001). Compared to cold steel dissection, bipolar diathermy had a significantly increased infection rate (P<0.001) and caused noticeably more tissue injury (P<0.001) (Table 3).

Table (3): Hemorrhage, pain, infection and tissue damage of the studied cohorts

	Cold steel issection (n=200)	Bipolar diathermy (n=200)	P
Haemorrhage	115 (57.5%)	24 (12%)	**<0.001***
Pain	23 (11.5%)	102 (51%)	**<0.001***
Infection	0 (0%)	78 (39%)	**<0.001***
Tissue damage	0 (0%)	60 (30%)	**<0.001***

Data are presented as frequency (%). * Significant P value <0.05.

DISCUSSION

One of the most frequent surgical techniques in otorhinolaryngology is tonsil surgery. It is a rather safe and less invasive surgical procedure. Even though most countries in the globe have advanced and readily accessible surgical technologies for such modest operations, postoperative unfavorable effects can still occur and can be dangerous or even fatal [7]. Tonsillectomy frequently results in postoperative infection, hemorrhage, tongue edema, discomfort, dehydration, damage to the glossopharyngeal nerve, and damage to the carotid arteries. This retrospective analysis was conducted on 400 cases of tonsillectomy performed on Egyptian pediatrics. Bipolar diathermy and cold steel dissection were performed on 200 (50%) of the cases. We concur with **Kamar *et al.*** [8] who found that the cold steel procedure took longer duration of time (in minutes) [24.0444 ± 2.3351] than the bipolar diathermy approach [15.2889 ± 1.9612], and that the difference was statistically significant (P< 0.0001). Additionally, the mean operative time (minutes) was 24.94+2.26 minutes for the cold steel cohort and 13.09+1.66 minutes for the bipolar diathermy cohort, according to **Niaz *et al.*** [9] with a p value of 0.0001. Contrary to our results, **Chughtai *et al***. [10] found no discernible difference in the two cohorts' operating periods, which were 12.50 minutes for the bipolar diathermy cohort and 15.90 minutes for the cold steel tonsillectomy cohort.

According to our findings, cold steel dissection caused much more bleeding than bipolar diathermy (P <0.001). In cold steel dissection, hemorrhage happened in 115 cases (57.5%), while in bipolar diathermy, it happened in 24 cases (12%). In agreement with our findings, **Kamar *et al.*** [8] found that the cold steel method [33.0000 ± 5.8737] resulted in a greater total blood loss (in milliliters) than the bipolar diathermy method [15.0778 ± 4.6011], and this difference was statistically significant (P<0.0001). According to **Niaz *et al.*** [9] a comparison of the traditional cold steel and bipolar diathermy tonsillectomy showed that the blood loss in the cold steel cohort was 24.57+1.42 ml, while in the bipolar diathermy cohort it was 11.17+1.67 ml. The p-value was 0.001. Our results are consistent with those of **Chughtai *et al.*** [10] who found that the cold steel cohort experienced a much greater blood loss than the bipolar diathermy cohort. It was 90.20 ml in cold steel and 20.50 ml in the bipolar diathermy cohort.

Bipolar diathermy caused much more pain than cold steel dissection in the current investigation (P<0.001). In cold steel dissection, 23 cases (11.5%) experienced pain, while in bipolar diathermy, 102 cases (51%) experienced pain. In keeping with our findings, **Kamar *et al.*** [8] found that the cold steel approach [4.4889 ±.6613] caused less discomfort on the first post-operative day than the bipolar diathermy method [4.9556 ± 0.2084], and this difference was statistically significant (p < 0.0001). On the third post-operative day, the cold dissection method [2.0222 ±.7830] caused considerably less pain than the bipolar diathermy method [2.5778 ± 1.0111] (p = 0.0045). The bipolar diathermy method caused higher pain on post-operative day 10 [1.6222 ±.7474] than the cold steel method [.3778 ±.4903], and this difference was statistically significant (p < 0.0001). Our results are consistent with those of **Chughtai *et al***.[10] who found that the tonsillectomy cohorts undergoing bipolar diathermy had higher levels of discomfort at all post-operative visits than the bipolar diathermy cohort.

Our results showed that compared to cold steel dissection, infection was considerably higher in bipolar diathermy (P value<0.001). No case in cold steel dissection developed an infection, whereas 78 cases (39%) in bipolar diathermy did.

According to the current investigation, cold steel dissection caused much less tissue injury than bipolar diathermy (P<0.001). While 60 (30%) of the cases undergoing bipolar diathermy experienced infection, none of the cases undergoing cold steel dissection experienced tissue injury.

Relatively small sample size, brief follow-up period, absence of randomization, electoral bias that could affect results, and the weak nature of retrospective research were the research's weaknesses.

RECOMMENDATIONS

For more accurate results, bigger, stratified sample sizes are advised for future research. Longer follow-up periods to identify potential long-term issues with each surgical method, giving a more comprehensive picture of their effectiveness and safety. For more broadly applicable findings, a multi-center investigation is advised. It is advised to conduct randomized controlled clinical trials in order to boost the analysis's statistical power. By ensuring that participants are assigned to each surgical procedure at random and reducing selection bias, they would enable more reliable comparisons. To isolate the effects of the surgical approaches under comparison, it is crucial to control for variables including the surgeon's expertise, case comorbidities, and variations in surgical techniques. A more thorough assessment might be obtained by combining subjective evaluations of pain with objective measurements. Meticulous selection of surgical methods according to their individual profiles of tissue damage, infection rates, pain thresholds, hemorrhage risk, and operation duration.

CONCLUSION

With a longer operation duration and a higher rate of bleeding in cold steel dissection, our research demonstrated the notable variations in surgical outcomes between bipolar diathermy and cold dissection in tonsillectomy. Infection rates, tissue damage, and pain are all markedly higher in the bipolar diathermy cohort. Consequently, it is advised to conduct more multi-center randomized controlled clinical trials with a bigger, stratified sample size and a longer follow-up period.

Funding: No funding.
Conflict of interest: No conflict of interest.
Acknowledgments: No acknowledgments.

REFERENCES

1. Junaid M, Malik N, Abdelsalam Soliman Galbt Y *et al.* (2021): To Give or Not to Give? Prescribing Antibiotics to the Tonsillectomy Patients in a Tertiary Care Setting. Cureus., 13: 12-89.
2. Heussien Z, Yousef N, Temark H *et al.* (2020): Isolation, identification and Antibiogram study of pathogenic bacteria mediated Children Chronic Tonsillitis at Qena University Hospital, Egypt. SVU Int J Med Sci., 3: 1-8.
3. Aljfout Q, Alississ A, Rashdan H *et al.* (2016): Antibiotics for Post-Tonsillectomy Morbidity: Comparative Analysis of a Single Institutional Experience. J Clin Med Res., 8: 3-8.
4. Tsai C, Wu P (2020): Possible beneficial role of throat gargling in the coronavirus disease pandemic. Public Health, 185: 45-6.
5. Hamblen-Thomas C (1938): Factors in painless tonsillectomy. Postgrad Med J., 14: 147-200.
6. Trottier A, Massoud E, Brown T (2013): A case of hoarseness and vocal cord immobility. CMAJ., 185: 1520-4.
7. Uusitalo T, Sakki A, Laajala A *et al.* (2025): Trends and practices in tonsil surgery—a national survey for otorhinolaryngologists. Laryngoscope Investig Otolaryngol., 10: 55-82.
8. Kamar M, Mahapatra S, Saha P *et al.* (2022): A comparison between cold steel method and bipolar diathermy method of tonsillectomy. BJOHNS., 30: 287-92.
9. Niaz A, Saeed M, Hyder H (2020): Comparison of bipolar diathermy tonsillectomy versus cold steel dissection tonsillectomy. APMC.,14: 102-5.
10. Chughtai A, Haq A, Ullah S. (2016): Is the cold steel dissection method still the most effective method of tonsillectomy? Cold steel dissection for tonsillectomy. Pak Armed Forces Med J., 66: 705-09.