

# World Journal of *Otorhinolaryngology*

*World J Otorhinolaryngol* 2023 February 28; 10(1): 1-3



**LETTER TO THE EDITOR**

- 1 Examining the life-cycle of the Coblator II device: Increases in paediatric post-tonsillectomy haemorrhage after six years of use

*Winters R, Rodriguez KH*

**ABOUT COVER**

Editorial Board Member of *World Journal of Otorhinology*, Mario Rigante, MD, PhD, Associate Professor, Department of Otorhinology, University of Perugia, Perugia 06132, Italy. [mario.rigante@unipg.it](mailto:mario.rigante@unipg.it)

**AIMS AND SCOPE**

The primary aim of *World Journal of Otorhinology* (*WJO, World J Otorhinology*) is to provide scholars and readers from various fields of otorhinology with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

*WJO* mainly publishes articles reporting research results and findings obtained in the field of otorhinology and covering a wide range of topics including adenoidectomy, audiology, auditory brain stem implantation, ciliary motility disorders, cochlear implantation, ear diseases, endolymphatic shunt, fenestration, labyrinth, laryngeal diseases, laryngectomy, laryngoplasty, laryngoscopy, middle ear ventilation, myringoplasty, nasal surgical procedures, neck dissection, nose diseases, ossicular replacement, otologic surgical procedures, otorhinologic diseases, otorhinologic neoplasms, otorhinologic surgical procedures, pharyngeal diseases, pharyngectomy, pharyngostomy, rhinoplasty, stapes surgery, tonsillectomy, tracheostomy, transtympanic micropressure treatment, and tympanoplasty.

**INDEXING/ABSTRACTING**

The *WJO* is now abstracted and indexed in Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: *Ying-Yi Yuan*, Production Department Director: *Xu Guo*, Editorial Office Director: *Yu-Jie Ma*.

**NAME OF JOURNAL**

*World Journal of Otorhinology*

**ISSN**

ISSN 2218-6247 (online)

**LAUNCH DATE**

December 28, 2011

**FREQUENCY**

Continuous Publication

**EDITORS-IN-CHIEF**

Amr El-Shazly

**EDITORIAL BOARD MEMBERS**

<https://www.wjgnet.com/2218-6247/editorialboard.htm>

**PUBLICATION DATE**

February 28, 2023

**COPYRIGHT**

© 2023 Baishideng Publishing Group Inc

**INSTRUCTIONS TO AUTHORS**

<https://www.wjgnet.com/bpg/gerinfo/204>

**GUIDELINES FOR ETHICS DOCUMENTS**

<https://www.wjgnet.com/bpg/GerInfo/287>

**GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH**

<https://www.wjgnet.com/bpg/gerinfo/240>

**PUBLICATION ETHICS**

<https://www.wjgnet.com/bpg/GerInfo/288>

**PUBLICATION MISCONDUCT**

<https://www.wjgnet.com/bpg/gerinfo/208>

**ARTICLE PROCESSING CHARGE**

<https://www.wjgnet.com/bpg/gerinfo/242>

**STEPS FOR SUBMITTING MANUSCRIPTS**

<https://www.wjgnet.com/bpg/GerInfo/239>

**ONLINE SUBMISSION**

<https://www.f6publishing.com>

## Examining the life-cycle of the Coblator II device: Increases in paediatric post-tonsillectomy haemorrhage after six years of use

Ryan Winters, Kimsey H Rodriguez

### Specialty type:

Otorhinolaryngology

### Provenance and peer review:

Unsolicited article; Externally peer reviewed.

### Peer-review model:

Single blind

### Peer-review report's scientific quality classification

Grade A (Excellent): A

Grade B (Very good): B

Grade C (Good): 0

Grade D (Fair): 0

Grade E (Poor): 0

### P-Reviewer:

Abubakar MS,  
Nigeria; Shorrab AA, United Arab  
Emirates

**Received:** November 28, 2022

**Peer-review started:** November 28, 2022

**First decision:** January 3, 2023

**Revised:** January 4, 2023

**Accepted:** February 10, 2023

**Article in press:** February 10, 2023

**Published online:** February 28, 2023



**Ryan Winters**, Department of Otorhinolaryngology-Head & Neck Surgery, NSW Health/John Hunter Hospital, New Lambton Heights 2305, NSW, Australia

**Kimsey H Rodriguez**, Department of Otolaryngology-Head & Neck Surgery, Ochsner Medical Center, New Orleans, LA 70121, United States

**Corresponding author:** Ryan Winters, MD, Associate Professor, Department of Otorhinolaryngology-Head & Neck Surgery, NSW Health/John Hunter Hospital, Lookout Road, New Lambton Heights 2305, NSW, Australia. [ryan.winters@health.nsw.gov.au](mailto:ryan.winters@health.nsw.gov.au)

### Abstract

All paediatric tonsillectomies were examined from 2012 – 2019 at a single tertiary-referral institution, and all were performed by one of two paediatric otolaryngologists. One exclusively used the diathermy, the other exclusively used the Coblator II. Two Coblator units were purchased simultaneously in 2012 and not replaced. There was no significant difference in number of tonsillectomies performed (1298 *via* diathermy, 1221 *via* Coblator), nor in postoperative day of bleed, patient age, indication for procedure, and no patient had an underlying coagulopathy. The most common indication for tonsillectomy in both groups was sleep-disordered breathing. There was no significant difference in postoperative haemorrhage rates between groups for the first six years of the study (0%-1.4%/year). Years 7 and 8 saw the Coblator group haemorrhage rate significantly increase (0%-0.6% diathermy group *vs* 2%-3% Coblator group), though still fell within accepted rate of postoperative haemorrhage. The devices were then replaced, and the differences in haemorrhage disappeared. There appears to be a significant increase in paediatric post-tonsillectomy haemorrhage when using a Coblator device greater than six years old. This may suggest a useful lifespan for the Coblator II device.

**Key Words:** Tonsillectomy; Paediatric; Post-operative; Haemorrhage; Diathermy; Coblator

©The Author(s) 2023. Published by Baishideng Publishing Group Inc. All rights reserved.

**Core Tip:** There appears to be a significant increase in paediatric post-tonsillectomy haemorrhage when using a coblator device greater than six years old.

**Citation:** Winters R, Rodriguez KH. Examining the life-cycle of the Coblator II device: Increases in paediatric post-tonsillectomy haemorrhage after six years of use. *World J Otorhinolaryngol* 2023; 10(1): 1-3

**URL:** <https://www.wjgnet.com/2218-6247/full/v10/i1/1.htm>

**DOI:** <https://dx.doi.org/10.5319/wjo.v10.i1.1>

## TO THE EDITOR

Many techniques have been described for paediatric tonsillectomy, diathermy and Coblator each have long, successful, histories of safe outcomes[1,2]. As with any piece of technology or hardware, there is a potential useful life for the Coblator device after which the reliability becomes more questionable. Ochsner acquired two Coblator devices in January 2012 and used the same devices continuously (without replacement, with manufacturer-prescribed periodic preventative maintenance performed according to the manufacturer's protocol) continuously throughout the study period. We describe the experience of tonsillectomy bleeds by two paediatric otolaryngologists requiring return to theatre at a quaternary referral centre. One surgeon exclusively utilized diathermy, the other exclusively Coblator, all other practice parameters equivalent, from 2012–2019. For insurance reasons, all patients were seen within our health system for all elective and emergent complaints (Table 1).

2519 paediatric tonsillectomies were performed during the study period. 1298 by the diathermy surgeon, 1221 performed by the Coblator surgeon. There were no significant differences with respect to bleeding dyscrasias, medical co-morbidities, age, indications, day of bleed, or bleeds managed expectantly. No significant differences in postoperative haemorrhage were noted for the first five years (2012–2017: Diathermy surgeon: 0%-1.4%/year, Coblator surgeon: 0%-1.3%/year). Years six and seven revealed a significant ( $P < 0.05$ ) increase in haemorrhage requiring return to theatre in the Coblator group (2018-2019 diathermy surgeon: 0%-0.6%/year, Coblator surgeon: 2%-3%/year). This resolved with replacement of the Coblator devices after 2019. As with any hardware device, there is presumably a useful lifespan. The device life for the Coblator II unit has not been previously reported in relation to paediatric tonsillectomy, though device maintenance for Coblator-based reusable wands have been discussed in the orthopaedic literature[3]. These orthopaedic reports are significantly different in that the complication was from the reusable wand, rather than the Coblator unit itself. The wand used in paediatric tonsillectomy is single-use, but each was connected to the same Coblator devices in our study. It appears that the rate of postoperative haemorrhage essentially doubles for Coblator tonsillectomy after six years of continued use. Even this elevated haemorrhage rate falls within the "acceptable" range for paediatric tonsillectomy, but is still significantly elevated when compared to younger devices. This could describe a "working life" for the Coblator device in paediatric tonsillectomy. Lower haemorrhage rates could potentially be maintained with regular device replacement[4].

**Table 1 Postoperative haemorrhage rates by year and surgical technique**

Year	Coblator actual (%)	Diathermy actual (%)	P value
2012	0-0	0-0	1.0
2013	1-0.7	2-1	0.77
2014	1-0.7	0-0	0.30
2015	2-1.4	1-0.5	0.38
2016	2-0.9	1-0.5	0.62
2017	1-0.6	2-1.3	0.51
2018	4-2	1-0.6	0.05
2019	5-3	0-0	0.03

## FOOTNOTES

**Author contributions:** All authors participated in experimental design, patient care/protocol application, and manuscript preparation and review.

**Conflict-of-interest statement:** All the authors report no relevant conflicts of interest for this article.

**Open-Access:** This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-

NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

**Country/Territory of origin:** Australia

**ORCID number:** Ryan Winters [0000-0003-2909-5667](https://orcid.org/0000-0003-2909-5667).

**S-Editor:** Xing YX

**L-Editor:** A

**P-Editor:** Xing YX

---

## REFERENCES

---

- 1 **Divi V**, Benninger M. Postoperative tonsillectomy bleed: coblation vs noncoblation. *Laryngoscope* 2005; **115**: 31-33 [PMID: [15630361](https://pubmed.ncbi.nlm.nih.gov/15630361/) DOI: [10.1097/01.mlg.0000150682.62517.0e](https://doi.org/10.1097/01.mlg.0000150682.62517.0e)]
- 2 **Pynnonen M**, Brinkmeier JV, Thorne MC, Chong LY, Burton MJ. Coblation vs other surgical techniques for tonsillectomy. *Cochrane Database Syst Rev* 2017; **8**: CD004619 [PMID: [28828761](https://pubmed.ncbi.nlm.nih.gov/28828761/) DOI: [10.1002/14651858.CD004619.pub3](https://doi.org/10.1002/14651858.CD004619.pub3)]
- 3 **Kim Y**, Kim HK, Yoon JR, Muzaffar N, Kim TS, Shin YS. Separation of the tip of a coblation wand within the knee joint: a complication of arthroscopic adhesiolysis. *Clin Orthop Surg* 2010; **2**: 125-127 [PMID: [20514271](https://pubmed.ncbi.nlm.nih.gov/20514271/) DOI: [10.4055/cios.2010.2.2.125](https://doi.org/10.4055/cios.2010.2.2.125)]
- 4 **Reusser NM**, Bender RW, Agrawal NA, Albright JT, Duncan NO, Edmonds JL. Post-tonsillectomy hemorrhage rates in children compared by surgical technique. *Ear Nose Throat J* 2017; **96**: E7-E11 [PMID: [28719712](https://pubmed.ncbi.nlm.nih.gov/28719712/) DOI: [10.1177/014556131709600702](https://doi.org/10.1177/014556131709600702)]



Published by **Baishideng Publishing Group Inc**  
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA  
**Telephone:** +1-925-3991568  
**E-mail:** [bpgoffice@wjgnet.com](mailto:bpgoffice@wjgnet.com)  
**Help Desk:** <https://www.f6publishing.com/helpdesk>  
<https://www.wjgnet.com>

