

Peer Review File

Article Information: <https://dx.doi.org/10.21037/ajo-21-52>

Reviewer A:

This is a large retrospective study and as such it merits publication.

Some clarifications are needed, and findings needs to be discussed in more detail, please see comments, references need to be updated

Introduction,

Comment 1: the rate of post tonsillectomy secondary haemorrhage you found in the literature seems very low 0.1 to 3.5 %. Please review the Austrian audit and the Swedish Tonsil register data among others.

Reply 1: Victorian study (2022), UK study and Swedish register data included.

Changes in the text: Maximum ranges of primary and secondary PTH rates updated as seen on page 4, line 14.

Methods

Comment 2: Is it really cold steel if suction diathermy is used? What was the setting of the diathermy and how liberally was it used?

Reply 2: Suction diathermy was utilised scantily after cold steel tonsillectomy for haemostasis. This was the preference of one of the consultant surgeons. The suction diathermy was used at 10W with minimal use.

Changes in the text: "Cold dissection" tonsillectomy and "hot dissection" tonsillectomy have been put in quotation marks (page 6, lines 19-20) to denote what the authors are referring to. Footnotes 1 and 2 on page 6 explain that these dissection techniques will be referred to as cold and hot tonsillectomy techniques, respectively. Diathermy settings included (page 6, lines 18-21).

Comment 3: At our institution cold steel is no diathermy allowed until adrenalin soaked patties have been used for 3 minutes x 2 in the tonsillar fossa, remaining bleeding may be addressed with bipolar.

Reply 3: Suction diathermy was used scantily for haemostasis after cold steel tonsillectomy and insertion of sutures as per the preference of one of the ENT consultants.

Changes in the text: Above explained on page 6, lines 21-22, and page 7, line 1.

Results

Comment 4: Operating time of 55 minutes, please make a note of what is included in terms of procedures.

Reply 4: Table added to breakdown operative time by procedures performed.

Changes in the text: Referred to Table 5 on page 7, line 15. Added Table 5 on page 16, line 11.

Comment 5: Readmission rate please clarify for haemorrhage only or other reasons?

Reply 5: This is overall readmission rate as referred to on page 9, line 5. However, the breakdown is presented in Table 8 on page 17, line 7.

Changes in the text: Nil changes made.

Discussion

Comment 6: You might discuss your findings in the view of the findings of the National tonsil surgery register of Sweden

<https://ton.registercentrum.se/publikationer/vetenskapliga-publikationer/p/H10YGUXbl>

Another publication that would be worthwhile to compare your findings to; Post-tonsillectomy haemorrhage rates are related to technique for dissection and for haemostasis. An analysis of 15734 patients in the National Tonsil Surgery Register in Sweden

Reply 6: Findings compared with above study from the National Tonsil Surgery Register in Sweden as advised.

Changes in the text: Comparison of findings added on page 10, lines 14-17.

Comment 7: Please expand on strength and weaknesses of the study.

Reply 7: The study's retrospective nature, combination of procedures (not just tonsillectomy), and insufficient data on primary surgeon have been included as limitations.

Changes in the text: Please refer to limitations section on page 12, lines 8-18.

Comment 8: Please make a brief note of the fact that coblation seems to cause 4 times as many secondary bleeds (although numbers are small). Will you continue with coblation?

Reply 8: Point added as advised and a possible reason why it has not been utilized extensively in this hospital

Changes in the text: Above point added on page 12, lines 3-6.

Tables

Comment 9: Overall the tables are difficult to understand and the reader is not directed towards the important information. Please facilitate interpreting tables

Reply 9: Please see below.

Changes in the text: Please see below.

Comment 10: Table 2 difficult to understand. What does it tell us? Please put conclusion of table in table legend or delete

Reply 10: Table deleted and statistics referred to within results section.

Changes in the text: OR and 95% CI included in brackets on page 8, line 6.

Comment 11: Table 5 difficult to understand. What does it tell us? Please put conclusion of table in table legend

Reply 11: Operation performed (e.g. tonsillectomy, adenotonsillectomy, etc), technique employed, and length of operation were not statistically significant for secondary PTH.

Changes in the text: Conclusion of table (now table 4 in this revised version) inserted in table legend as advised (page 16, lines 8-9).

Comment 12: Table 9 difficult to understand. What does it tell us? Please put conclusion of table in table legend

Reply 12: Multivariate analysis findings explained in body of text and table legend added as advised.

Changes in the text: Multivariate analysis findings explained on page 9, lines 9-14 and table legend added on page 18, line 1.

Reviewer B:

This paper is a 10 year retrospective audit of tonsillectomy in a regional Australian town. The primary outcomes measured are post tonsillectomy bleed and readmission. The authors compare varied operative techniques. Their post tonsillectomy bleed rates are comparable to the literature at large, and they do not find one technique superior to the other in this regard. They do find age and primary bleeds statistically significant risk factors for secondary bleeds.

As written this paper does not add much to the literature. The authors mention in the introduction the unique nature of regional tonsillectomy but don't use their results to discuss this or come to any conclusions. The definition of the defined "cold technique" along with other sections in the methods requires clarification (see below).

In order for this to be a valuable contribution to the literature, the authors need to explore how their results are important for otolaryngology and specifically the regional delivery of services.

Comment 13: Given this article has only just published in AJO would recommend the authors read and perhaps use in discussion. How does their work complement or differ from this recent publication.

Jones A, Grant A, Saputra L, Lathif A, Krishan B. Tonsillectomy in regional Australia: management and outcomes. Australian Journal of Otolaryngology. 2021 Dec 31;4. Arthur Jones, Alice Grant, Lydia Saputra, Abdul Lathif, Bal Krishan

Reply 13: PTH rates compared to above article and link made to regional status and hence its relevance.

Changes in the text: Above article compared to and referenced on page 10, lines 12-14.

Can I encourage the authors to use line numbering if they are revising? This is very helpful for the reviewer. Likewise please ensure the instructions to authors are read thoroughly, in particular with regards to referencing - see below.

Comment 14: No description with regards to what regional means in this paper - where is it, what is the catchment, what are the resources etc - without this information the reader can't translate how this may be appropriate to their situation.

Reply 14: Above descriptions addressed as advised.

Changes in the text: We have included this information on page 5, lines 2-6.

Abstract:

Comment 15: "Careful planning is needed when performing tonsillectomy"..... how does this study reflect this statement

Reply 15: Above statement deleted and replaced with accurate/relevant recommendations.

Changes in the text: Above corrected on page 3, lines 3-4.

Keywords

Comment 16: Hot is not a MeSH heading can I suggest postoperative haemorrhage as a better keyword.

MeSH heading improve medline searches <https://meshb.nlm.nih.gov> (there is a tool within this site to enter your text and the program will recommend keywords, it also provides links to articles with the same keywords, which can be useful to ensure you reference similar articles)

Reply 16: "Hot" removed and "postoperative haemorrhage" added as advised. "Cold" also removed and replaced with "readmission".

Changes in the text: We have modified our text on page 3, line 8.

Introduction:

Comment 17: Suggest definition used is extracapsular tonsillectomy, given the introduction of intracapsular techniques and the recognised differences in post operative complications.

Reply 17: Above acknowledged.

Changes in the text: "Extracapsular" added on page 4, line 2.

Comment 18: Best clinical outcomes?? Do the authors mean best postoperative recovery?

Reply 18: Above acknowledged.

Changes in the text: Above changes made as advised on page 4, line 17.

Comment 19: I would debate that any use of diathermy can be called a cold technique - a truly cold technique uses NO electrocautery whether bipolar or monopolar. If the author is using blunt dissection and electrocautery as their definition of cold tonsillectomy this needs to be defined in the methods and should not be called a "cold" tonsil.

Reply 19: We have defined "hot dissection" and "cold dissection" tonsillectomy in the methods section as advised. Where suction diathermy was used for "cold" tonsillectomy; this was used only scantily at a very low wattage (10W); this was one of the ENT consultant's preferences.

Changes in the text: "Cold dissection" tonsillectomy and "hot dissection" tonsillectomy have been put in quotation marks (page 6, lines 19-20) to denote what the authors are referring to. Footnotes 1 and 2 on page 6 explain that these dissection techniques will be referred to as cold and hot tonsillectomy techniques, respectively. Diathermy settings included (page 6, lines 18-21).

Comment 20: Rates of secondary bleeds are much more varied than 1.3-3.5% - should be quoting the biggest cohort studies eg Uk, Sweden (9%) , victorian (3.97%) etc

Söderman AC, Odhagen E, Ericsson E, Hemlin C, Hultcrantz E, Sunnergren O, Stalfors J. Post-tonsillectomy haemorrhage rates are related to technique for dissection and for haemostasis. An analysis of 15734 patients in the National Tonsil Surgery Register in Sweden. *Clinical Otolaryngology*. 2015 Jun;40(3):248-54.

Tran, Aimy HL, et al. "Hospital revisits after paediatric tonsillectomy: a cohort study." *Journal of Otolaryngology-Head & Neck Surgery* 51.1 (2022): 1-11.

Reply 20: Above articles included as advised.

Changes in the text: Rates updated on page 4, lines 14-15, and referenced accordingly.

Comment 21: "Most ideal" - bad grammar

Reply 21: Changed to "most suitable"

Changes in the text: Above changed on page 5, line 9.

Comment 22: Reference 8 is a good paper and likely useful for the discussion but its use in the introduction to given figures with regard to regional populations numbers is not a primary data source - this should be sourced from Australian census data or something similar.

Reply 22: Data referenced from original source (Australian Institute of Health and Welfare) as advised.

Changes in the text: Referenced accordingly on page 5, line 2.

Methods:

Comment 23: Cold technique - does the author really mean suction diathermy was used for tonsillectomy haemostasis? Suction diathermy is more usually used for the adenoidectomy. Can the author clarify whether ties, sutures, bipolar or monopole was used for the tonsil haemostasis. If suction monopole diathermy was used for tonsil haemostasis this is an unusual tonsil haemostasis technique and further information with regards to diathermy settings would be useful. Only ties and sutures are cold techniques.

Diathermy settings should be defined for all methods including electrocautery. Can the author also confirm that the coblation tonsillectomies were extracapsular and what the coblation settings were.

Reply 23: Yes, as per the preference of one of the consultant ENT surgeons, suction diathermy was used (only scantily) for tonsillectomy haemostasis after cold steel dissection and placement of sutures. All tonsillectomies including coblation tonsillectomy were extracapsular in nature. All settings have now been included.

Changes in the text: The above information added on page 6, lines 17-22.

Comment 24: Did the authors collect data on which operations were performed by the consultant and which by the trainee? This could have influence of post tonsillectomy bleed rates, as well as other variables like operative time.

Reply 24: This data was not collected, although anecdotally the vast majority were performed by a junior unaccredited ENT registrar. This is discussed in the limitations section.

Changes in the text: Please refer to limitations on page 12, lines 15-18.

Comment 25: I would be keen for the method section to briefly describe the routine post operative management in this department for tonsillectomy eg overnight stay, post operative analgesia and routine followup. Are there any other routine operative techniques used eg TXA, intraoperative dexamethasone, antibiotics etc.

Given this is a regional centre what are the exclusion criteria for surgery - under or over a certain weight or age, co-morbidities etc. Does the hospital have guidelines with regards to distance lived from the hospital? All these things provide a bias to patient selection which isn't commented on in the discussion.

Reply 25: Routine postoperative care added as advised. Age cut-off and distance from hospital after the operation also included.

Changes in the text: Postoperative care included on page 7, lines 1-3. Age and distance parameters included on page 7, lines 3-5.

Comment 26: The methods do not explain what the hospital's routine management of post operative bleeds is.

Reply 26: The hospital's routine management has now been included as advised.

Changes in the text: Above added on page 7, lines 7-13.

Results:

Comment 27: The lack of raw data does not allow the reader to analysis any of the results independent of the author.

I would be keen for more demographic data to be provided, especially with regards to age. Could the author provide any graphical representation of the spread of patients with regards to age? Indication for surgery would also have been useful.

Reply 27: Graphical representation of age distribution added as requested. Data on indication for surgery has not been included and will be discussed in the limitations.

Changes in the text: Graph added on page 15, line 5 and referred to on page 8, line 4.

Comment 28: The operative times seem long. This may require comment in the discussion. Is this because these were supervised junior registrars performing the operation? Or is there any other explanation. Is this just operative time or includes anaesthetic time?

Reply 28: Agree this is longer than expected. Most of these were performed by junior registrars. Operative time does not include anaesthetic time.

Changes in the text: Above explanation added on page 11, lines 8-11.

Comment 29: Increased age associated with increase bleeding - can the authors be any more specific on this? Over a certain age? What was deemed younger and what older?

Reply 29: A 1-year increase in age was associated with increased risk of secondary PTH. Patients with a PTH had a higher mean age than those without PTH.

Changes in the text: "1-year increase" added including OR and 95% CI, as well as average age for PTH and non-PTH groups on page 8, lines 4-7.

Comment 30: The risk of a primary bleed increasing the secondary bleed risk requires attention in the discussion as to what precautions should be taken in this small but statistically significant group

Reply 30: Please refer to comment 35.

Changes in the text: Please refer to comment 35.

Discussion:

Comment 31: "most ENT surgeons visit these regions for only 24 to 48 hours before returning to their metropolitan practices" Although some surgeons may do fly in and fly out surgery that isn't necessary the norm and the data presented in this study doesn't reflect this practise (or if it does this isn't discussed in the methods). What do the authors results suggest as to this practise? The result

state 30% of tonsil bleeds required a return to theatre in this study period, how is this managed in a fly in and fly out service? Bleeds may have different consequences in a paediatric patient than an adult patient but the data presented doesn't allow the reader to analysis this risk for themselves.

Reply 31: Above comment agreed with and accepted that this is not the norm.

Changes in the text: Above changes made on page 10, lines 5-9.

Comment 32: "secondary PTH can be due to the sloughing of eschar, trauma secondary to solid food ingestion, tonsil bed infection, postoperative non-steroidal anti-inflammatory drug (NSAID) usage, or idiopathic causes (13, 14)." Secondary bleed risk factors are postulated to be associated with these factors but I don't think proven to be caused by any of these. With regards to NSAID use - the Cochrane review states insignificant evidence to exclude increase post operative bleed but doesn't say it definitely causes an increase bleed risk. The trauma due to solid food ingestion is an outdated postulation - it is generally recommended that healing is better with solid food than with soft food or liquids only.

Reply 32: Direct causation has been removed and wording changed to more of a postulation as advised. Trauma due to solid food as a cause has been deleted.

Changes in the text: Above changes made on page 10, lines 20-23.

Comment 33: "This study supports increasing age to be a risk factor for secondary PTH" - can the authors put an age on this?

Reply 33: Please see comment 29.

Changes in the text: Please see comment 29.

Comment 34: "Interestingly, primary PTH was shown to be associated with secondary PTH, which has previously not been reported" -I agree this is an important finding and would like to see the authors expand how they suggest these patients are managed eg send home on TXA, avoidance of NSAIDS, closer postoperative followup, checking coats and von willibrand levels.

Reply 34: Longer observation period, addition of TXA and hydrogen peroxide gargles and shorter follow up times have now been recommended as advised.

Changes in the text: Above additions made on page 11, lines 14-17.

Comment 35: The authors need to address the other limitations associated with the study, particularly the fact it was a retrospective audit.

This could result in bias, as not randomised to technique or surgeon it is possible that a certain technique was used due to patient or surgeon factors. It is thus more difficult to draw the conclusion that both techniques are equitable.

Reply 35: The study's retrospective nature, combination of procedures (not just tonsillectomy), and insufficient data on primary surgeon have been included as limitations.

Changes in the text: Please refer to limitations section on page 12, lines 8-18.

Comment 36: The discussion fails to discuss the importance of the results and how it might be used to improve patient, hospital and system management.

Reply 36: Conclusion updated to include the importance of the results (i.e. acceptable PTH rates, no significant difference between techniques or Indigenous status, and significant association between increasing age/primary PTH and secondary PTH). We have also recommenced closer observations for such patients as a hospital/system modification to improve patient care.

Changes in the text: Above changes made on page 12, lines 22-23, and page 13, lines 1-3.

Comment 37: The large proportion of indigenous patients in the cohort may be worthy of comment. Tonsillectomy in the indigenous population is poorly reported in the literature. The multivariate analysis (table 9) shows no significant difference in bleed rates based on background - I wonder if better terminology than “background” could be used to describe indigenous heritage.

Reply 37: Large proportion (32%) of indigenous patients in this referred to in the discussions section. “Background” changed to “Aboriginal and/or Torres Strait Islander” in Table 9.

Changes in the text: 32% added on page 10, lines 3-4. Table 9 updated on page 14, line 1.

References:

Comment 38: Have the authors used the Vancouver style as per the author instructions and read the instructions on the AJO webpage?

Eg Reference 8 from AJO as per Vancouver style should read:

Anning R, Cope D, Treble A et al . Tonsillectomy: does proximity from otolaryngology care influence the intra-operative or post-operative plan? Australian Journal of Otolaryngology. 2021 Jun 28;4.

Reply 38: References updated to reflect Vancouver style. Style downloaded from AJO website and used in EndNote20.

Changes in the text: Please see references on pages 19-21.