

Critical Intelligence Unit

In brief

Post-tonsillectomy bleeding in children

3 November 2023

Evidence check questions

What are the risks of bleeding after tonsillectomy surgery in children?

What are the management options?

Peer-reviewed literature

- In Australia, between 2000 and 2020, the overall rate of post-tonsillectomy haemorrhage for all ages remained relatively constant at around 1.6%.¹ The rate for the paediatric age group was around 1% for the study period.¹
- In the United States, a retrospective national cohort study, involving 96,415 paediatric patients, predicted 50th percentiles for post-tonsillectomy bleeding to be 1.97%.²
- In patients who present to the emergency department (ED) with secondary post-tonsillectomy bleed, an Australian study found that:
 - The average post-operative day of presentation was 7.
 - 9.2% received operative intervention immediately after review while 90.8% were managed conservatively.
 - The risk of rebleeding was 2.9% and the median time to rebleed was 4.4 hours.³
- A 2022 Australia study examined the safety outcomes associated with a tonsillectomy and adenotonsillectomy service in outer regional Victoria. The service is provided by visiting specialists who remain on-site for 24 hours post-surgery. The study found that:
 - The complication rate associated with the surgery is 6.9% (14 out of 204).
 - The intraoperative and perioperative complication rate is 3.4% (7 out of 204).
 - The post-discharge complication rate is 3.4% (7 out of 204).
 - All intra- and peri-operative complications were managed locally.
 - All post-discharge complications presented to outer regional EDs.
 - Two patients (around 1%) required inter-hospital transfer for monitoring of post-tonsillectomy bleeds in a specialist unit.⁴
- **Tranexamic acid** (administered by nebulized, intravenous or topical applications) treatment of post-tonsillectomy haemorrhage, in both children and adults, was associated with lower rates of operative intervention and lower rates of repeat bleeding events.⁵⁻⁸

- The method and techniques of tonsillectomy can be associated with different risk profiles for the post-operative haemorrhage. For example:
 - **Coblation versus bipolar diathermy** in paediatric patients undergoing tonsillectomy was associated with a significantly lower rate of bleeding after 24 hours but similar rates of intraoperative bleeding and reactionary haemorrhage (2022 systematic review and meta-analysis).⁹
 - **Coblation versus cold dissection** in paediatric tonsillectomy patients was associated with less pain, less intra-operative blood loss, a shorter operative time and similar rates of post-operative haemorrhage (2020 systematic review and meta-analysis).¹⁰
 - In a 2022 cohort study of 5,525 children in England who underwent **intracapsular coblation tonsillectomy** procedures, the overall bleeding rate (primary haemorrhage return to theatre and secondary haemorrhage readmissions) was 1.3%.¹¹ The rate was lower than all tonsillectomy techniques (i.e. dissection or extracapsular) reported in a previous 2005 national prospective tonsillectomy audit and published literature.¹¹
- A short- and long-term comparison of **intracapsular versus extracapsular techniques** involving 2,508 children in the United States reported a lower rates of post-tonsillectomy haemorrhage with intracapsular tonsillectomy (0.76%) than the extracapsular group (2.3%).¹²
- **Virtual care** follow-up nurse practitioners demonstrated effectiveness in reducing the number of post-tonsillectomy office visits for paediatric patients without subsequently increasing the risk of complications.¹³

Clinical practice guides

- At the Sydney Children's Hospital at Westmead, children who underwent intracapsular tonsillectomy day surgery are discharged home under the care of VirtualKIDS if they meet certain criteria.
 - VirtualKIDS clinical nurse consultant will contact the patient and carers at 4 hours and 24 hours post-discharge.
 - Patients who had more than a teaspoonful of fresh blood post-discharge are escalated to the ED.¹⁴
- The Royal Children's Hospital Melbourne recommends that most children be placed on a criteria led discharge for the next morning post-operatively. The risk of secondary bleeding should be discussed with parents and carers with instructions for them to present to an ED if the bleeding is of more than a tablespoon or 50-cent piece size.¹⁵
- The Royal Victorian Eye and Ear Hospital recommends that when patients, carers and general practitioners call for advice for post-tonsillectomy bleeds, the following could be advised:
 - If actively bleeding, present to the nearest ED, preferably with ear, nose and throat specialist cover
 - If bleeding has stopped, it may be safe to advise monitoring at home for another 24 hours.¹⁶

Method

To inform this brief, PubMed and Google searches were conducted on 14 September 2023 using the following search terms.

PubMed search strategy

((("tonsillectomy"[MeSH Terms] OR "tonsillectomy"[All Fields] OR "tonsillectomies"[All Fields]) AND ("bleed*" [Title/Abstract] OR "hemorrhage"[MeSH Terms] OR "hemorrhage"[Title/Abstract] OR "haemorrhage"[Title/Abstract]) AND ("paediatric*" [Title/Abstract] OR "pediatrics"[MeSH Terms] OR "pediatric*" [Title/Abstract] OR "child"[MeSH Terms] OR "child*" [Title/Abstract])) AND (2018:2023[pdat]))

331 hits.

Google search terms

post-tonsillectomy bleeding in children AND management

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