

Post-Tonsillectomy Bleeding

Disclaimer: This Clinical Practice Guideline ('CPG') was written for use in The Royal Victorian Eye and Ear Hospital Emergency Department. It should be used under the guidance of an Ophthalmology or ENT registrar. If clinical advice is required, please contact the Eye and Ear Admitting Officer for assistance: EYE: +61 3 9929 8033; ENT: +61 3 9929 8032. Links to internal Eye and Ear documents cannot be accessed from the website CPG.

See also: Tonsillitis

Description:

Post-tonsillectomy bleeding is thought to occur in approximately 5% of cases following tonsil surgery. A bleed in the first 24 hours is considered a PRIMARY bleed and those occurring after 24 hours are a SECONDARY bleed (most frequently in days 5-9, up to 28 days).

The majority of post-tonsillectomy bleeds will be minor and self-limiting. However, small bleeds (so-called "herald bleeds") can precede a more severe haemorrhage in the following 24 hours and consequently all reports of bleeding should be taken very seriously. In its most serious form, post-tonsillectomy bleeding can cause haemorrhagic shock and aspiration, requiring an urgent return to the operating theatre to control.

Red Flags:

- Young patients (less than 18 years old) compensate haemodynamically, and may deteriorate rapidly
- Primary bleeds often require a return to theatre
- Consider coagulopathy if there is excessive and/or recurrent bleeding. Von Willebrand Factor disease is the most common congenital coagulopathy.
- Airway compromise (especially pre-existing in patients with Obstructive Sleep Apnea Syndrome)

How to Assess:

Phone Call Advice (ENT Admitting Officer):

If you are called by a patient/relative or a GP about bleeding, respond as follows:

1. If actively bleeding, advise going urgently to the nearest ED, preferably with ENT cover.
2. If bleeding has stopped, it may be safe to advise close monitoring at home for another 24 hours. Sucking ice can help if the bleeding has stopped or is minimal. If bleeding increases or recurs, advise going urgently to the nearest ED, preferably with ENT cover.

History:

Bleeding

- Active, heavy or light, intermittent?
- Ask patient about the amount of blood and when it started. A patient may present with active bleeding or with a history of recent bleeding, e.g. coughing blood or seeing blood on their pillow.
 - Try to estimate the blood loss (e.g. teaspoon, egg cup). This may be difficult as blood may have been swallowed.
- In children, a higher degree of care is needed, as excessive or difficulty swallowing may be the only clue to bleeding
- Some patients may vomit a small amount of dark, altered blood during the first couple of days, which may in fact represent blood swallowed during surgery and not a new bleed
- Find out who performed the operation, when and where it took place. Notify the surgeon about bleed if possible.

Examination:

- Wear gloves/gown and protective eye wear as per standard precautions
- Check ABC: is patient haemodynamically stable or in shock?
- Remain calm and reassure the patient
- Look for a clot on the tonsillar bed, check meticulously for any slow bleeding
- A sloughy, white appearance is normal after tonsillectomy

Acute Management:

If bleeding actively:

- Notify ENT registrar
- Immediate and continuous haemodynamic monitoring
- Consider calling a CODE BLUE if patient is unstable – summon senior anaesthetic/ENT assistance – this is a difficult airway situation
- May also need to call theatre to organise urgent theatre (including anaesthetic/ENT consultant)
- High flow oxygen if tolerated
- Sit the patient in an upright position to facilitate the removal of blood
- Insert large bore intravenous access and take blood for full blood count, urea and electrolytes and group and hold. If unstable, urgent cross-match. Patient may need coagulation profile.
- Intravenous fluids (in children 20mls/kg as initial bolus), analgesia and anti-emetics
 - Analgesia: oral or IV paracetamol regularly. Avoid NSAIDs.
- Establish when the patient last ate and drank. Ensure the patient remains nil by mouth.

- Tonsil procedure:
 - If you can visualise the bleeding spot (i.e. right vs. left tonsillar fossa/superior vs. inferior), firmly apply a large cotton swab stick soaked in 1:10,000 adrenaline
 - Alternatively, silver nitrite cautery may be attempted on the bleeding spot following application of topical Cophenylcaine® spray. This should be performed with ENT assistance.

NOTE: Both methods may stimulate the gag reflex and should only be attempted by an experienced operator. Both these measures should NOT delay theatre if required.

- If blood clot is visible on tonsillar bed:
 - Leave it if patient has only had one small bleed and is not actively bleeding
 - Remove/suction it out if there has been recurrent bleeding or if actively bleeding in order to visualise the bleeding spot. However, this can cause profuse bleeding, so only perform with ENT assistance and prepare in advance necessary equipment (silver nitrate cautery, bipolar cautery, suction, resuscitation equipment) and address potential need for urgent theatre.

Self terminated bleeding:

- Examine the patient thoroughly
- Tonsil procedure
 - If blood clot is visible on tonsillar bed, leave it if the patient has had a single small bleed and is not actively bleeding
 - Remove/suction the clot if there has been recurrent bleeding. This should be performed with ENT assistance and with IV access in situ as per '**If bleeding actively**' section.

Further management:

- Patient usually should be admitted for 24hrs to observe for further bleeding
- Consider the use of 3% H₂O₂ dilute in 1-2x volume of water as four hourly mouth washes if bleeding slowly or has stopped (the benefit of this has not been established)
- The use of antibiotics is not necessarily indicated for the treatment of all post-tonsillectomy secondary haemorrhage patients. Routine use of antibiotics in patients who do not have clear features of infection (e.g. pyrexia, raised white cell count or C reactive protein) remains uncertain.
- Tranexamic acid – there is no direct evidence for its use in post-tonsillectomy bleeding but there is strong evidence that it reduces the need for transfusion in surgical bleeding in general. Dosage: 1 gram tranexamic acid via IV infusion.

Evidence Table

Author(s)	Title	Source	Level of Evidence (I – VII)
Blakley BW	Post tonsillectomy bleeding: How much is too much?	Otolaryngol Head Neck Surg. 2009 vol. 140 no. 3 288-290	V
Georgalas C, Tolley, Narula N	Tonsillectomy. Cold Steel tonsillectomy compared with diathermy tonsillectomy.	BMJ Clinical Evidence June 2007	I
Lee MS, Montague MK, Hussain SS	Post-tonsillectomy haemorrhage: cold vs. hot dissection	Otolaryngol Head Neck Surg. 2004 Dec; 131(6):833-6	III
Lowe D, van der Meulen J	Tonsillectomy technique as a risk factor for post operative haemorrhage National Prospective Tonsillectomy Audit	Lancet 2004; 364; 697-702	VI
Ikoma R et al.	Risk factors for post-tonsillectomy haemorrhage	AurisNasus Larynx 2014 Aug 41(4): 376-9	VI
Sarny S, Habermann W, Ossimitz G, Stammberger H.	Significant post-tonsillectomy pain is associated with increased risk of haemorrhage	Ann OtolRhinolLaryngol. 2012 Dec; 121(12):776-81	VI
Sarny S, Ossimitz G, Habermann W, Stammberger H.	Haemorrhage following tonsil surgery: a multicenter prospective study	Laryngoscope. 2011 Dec; 121(12): 2553-60	III
Pai I, Lo S, Brown S, Toma AG	Does hydrogen peroxide mouthwash improve the outcome of secondary post-tonsillectomy bleed? A 10 year review.	Otolaryngol. Head and Neck Surgery. 2005. 133(2):202-5	VI
Ahsan F, Rashid H, Eng C, Bennett DM, Ah-See KW.	Is secondary haemorrhage after tonsillectomy in adults an infective condition? Objective measure of infection in a prospective cohort.	ClinOtolaryngol. 2007 Feb; 32(1): 24-7.	IV
Chan CC, Chan YY, Tanweer F	Systematic review and meta-analysis of the use of tranexamic acid in tonsillectomy.	Eur Arch Otorhinolaryngol. 2013 Feb;270(2):735-48.	I

The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynck and Fineout-Overholt (2011).

- I) Evidence obtained from a systematic review of all relevant randomised control trials.
- II) Evidence obtained from at least one well designed randomised control trial.
- III) Evidence obtained from well-designed controlled trials without randomisation.
- IV) Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case series.
- V) Evidence obtained from systematic reviews of descriptive and qualitative studies.
- VI) Evidence obtained from single descriptive and qualitative studies.
- VII) Expert opinion from clinician, authorities and/or reports of expert committees or based on physiology

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