Epistaxis in 2018

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Acknowledgements

• Jo-Ann Talbot, Paul VanHoutte

• All ER staff who manage epistaxis so effectively!
About me

• From London, Ontario

• Residency at Western

• Fellowship in Toronto
  • Rhinology, Anterior Skull Base and Head & Neck Oncology

• Saint John since August 2016
Goals

• Cover basic and advanced techniques to obtain hemostasis in the ER

• Review what options are available if that fails
Agenda

• Review of anatomy

• Management algorithm

• What options are available when traditional packing fails

• What’s new in epistaxis?

• Special scenarios
Anatomy

- Branch of sphenopalatine artery
- Posterior ethmoidal arteries
- Anterior ethmoidal arteries
- Kiesselbach area (orange)
- Incisive canal
- Septal branch of superior labial artery
- Greater palatine artery
General Principles

• Treat them like traumas

• IV, CBC, INR/PTT

• Reverse the anticoagulants if possible

• Use a headlight and a face mask!

• Hold the nose (or use a clip) while you gather your supplies
Traditional Algorithm

1. Decongest the nose
2. Silver Nitrate
3. Unilateral Non-dissolvable
4. Bilateral Non-dissolvable
5. Formal Posterior Pack
6. OR/Embolization
Traditional Algorithm

Decongest the nose

Silver Nitrate

Unilateral Non-dissolvable

Bilateral Non-dissolvable

Formal Posterior Pack

OR/Embolization

Decongest the nose

Silver Nitrate

Dissolvable "Sandwich"

Unilateral Non-dissolvable

Bilateral Non-dissolvable

OR/Embolization
Decongesting the Nose

• Absolutely essential

• The majority of bleeds will either stop or slow down significantly with proper decongestion

• Options: Oxymetazoline, Xylometazoline, Epinephrine (1:1000), Cocaine

• Can add topical lidocaine (esp if going to cauterize)
Decongesting the Nose

• I use Bayonets and Codman neuro patties if possible, but can use cotton balls soaked in medication
Silver Nitrate

• If able to visualize the source, is ideal

• Much more comfortable if topical lidocaine applied first

• Never cauterize both sides at the same time (risk of septal perforation)

• Silver nitrate good, bipolar is better (if available)
Silver Nitrate

- Decongest the nose
- Silver Nitrate
- Dissolvable "Sandwich"
- Non-dissolvables
- Posterior Pack
- OR/Embolization
Dissolvable packs

• I often use Surgifoam/Gelfoam (gelatin) wrapped in Surgicel (oxidized cellulose)

• I usually start them on Salinex spray the following day

• I don’t routinely start antibiotics
Non-Dissolvable packs

• Many options: Rapid Rhinos, Merocels, Epistats, gauze and more

Decongest the nose
Silver Nitrate
Dissolvable "Sandwich"
Non-dissolvables
Posterior Pack
OR/Embolization
Non-Dissolvable packs

- I leave in for 48-72 hours typically

- I recommend antibiotics when in place, because there is reasonable risk of developing sinusitis

- I usually start unilateral, and then if still ongoing bleeding, will add contralateral pack
Posterior packing

• If a patient fails bilateral large merocels/rapid rhinos, I feel the patient is best served by OR/Embolization

  • If not available, a posterior pack is an option
Posterior packing

• Classically, put a foley into nose until you see it hanging in oropharynx, then inflate with sterile water and pull back into nasopharynx

• Then pack nose bilaterally with gauze

• Typically place umbilical clip on foley to ensure the inflated bulb doesn’t drop into the oropharynx
Alar Necrosis

• Feared complication of posterior pack

• Avoid pressure on the nasal ala

• Very, very difficult to correct
Alar Necrosis

Decongest the nose
Silver Nitrate
Dissolvable "Sandwich"
Non-dissolvables
Posterior Pack
OR/Embolization
Posterior packing

Gauze padding of nostril wrapped around Foley

Horizontally layered ½” gauze packing saturated with mupirocin ointment

Foley balloon in posterior choana

0 - Silk ties around shaft of Foley catheter with remainder of catheter trimmed off

Decongest the nose
Silver Nitrate
Dissolvable “Sandwich”
Non-dissolvables
Posterior Pack
OR/Embolization

Epistaxis Update
Posterior packing

• Pt needs to be admitted

• Packs typically left in for 72 hours
Operative Management

• Surgical options:
  • Endoscopic sphenopalatine artery ligation (“ESPAL”)
  • Anterior ethmoidal artery ligation (“AEA”)
  • External carotid ligation (very rare)

• AEA ligated if suspicious it is the source (post-traumatic)
ESPAL

• Evidence shows that is very effective in controlling posterior epistaxis- 92-98% effective

• Minimal morbidity

• Cost effective

• Can be combined with ligation of anterior ethmoidal artery (AEA)
Embolization

• Similar effectiveness as surgery

• The internal maxillary artery and its’ branches are occluded

• Classically taught, CANNOT embolize the AEA for risk of stroke/blindness

• Patients often complain of significant facial pain post-procedure
Case

• 75 year old lady with hypertension and spontaneous, massive bleeds that last for 30 minutes at a time

• When she holds firm pressure to nares, and tilts head forward, it runs down her throat and she spits up large clots
SPA Ligation

• (Video)
What’s New in Epistaxis

• TXA

• Floseal
What is Tranexamic Acid?

• Antifibrinolytic medication

• Often used in trauma (injectable form) to reduce hemorrhage

• Recent interest in topical form
Tranexamic Acid

Topical Tranexamic Acid Compared With Anterior Nasal Packing for Treatment of Epistaxis in Patients Taking Antiplatelet Drugs: Randomized Controlled Trial

Reza Zahed, MD, Mohammad Hossain Mousavi Jazayeri, MD, Asieh Naderi, PhD, Zeinab Naderpour, MD, and Morteza Saeedi, MD
Tranexamic Acid

• RCT in patients with epistaxis on anticoagulants

• Found that TXA had lower rates of bleeding at 10 minutes compared to anterior packing

• The anterior packing they used was “…several cotton pledgets soaked in tetracycline ointment.”
Tranexamic Acid

Tranexamic acid in epistaxis: a systematic review
Kamhieh, Y. & Fox, H.

ENT Department, Royal Glamorgan Hospital, Llantrisant, Wales, UK
Accepted for publication 27 February 2016
Tranexamic Acid

**Table 1. Summary of included RCTs for spontaneous epistaxis**

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>Design</th>
<th>Dose</th>
<th>Effect</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>White <em>et al.</em></td>
<td>80</td>
<td>RCT Double</td>
<td>1 g TXA TDS PO</td>
<td>No significant overall effect</td>
<td>1 superficial thrombophlebitis, group not specified</td>
</tr>
<tr>
<td>(1987)</td>
<td></td>
<td>blind</td>
<td>10 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tibbelin <em>et al.</em></td>
<td>68</td>
<td>RCT Single</td>
<td>1.5 g TXA in gel, no packing</td>
<td>Trend to reduce re-bleed after TXA but Nil adverse ‘Bad taste’ both groups</td>
<td></td>
</tr>
<tr>
<td>(1995)</td>
<td></td>
<td>blind</td>
<td>10 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zahed <em>et al.</em></td>
<td>216</td>
<td>RCT Single</td>
<td>500 mg TXA on pledges</td>
<td>Significantly reduced duration of bleed and re-bleed rate</td>
<td>Nil adverse Nausea/vomiting both groups</td>
</tr>
<tr>
<td>(2013)</td>
<td></td>
<td>blind</td>
<td></td>
<td></td>
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</tr>
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</table>
Tranexamic Acid

Original Contribution

A new and rapid method for epistaxis treatment using injectable form of tranexamic acid topically: a randomized controlled trial

Reza Zahed MD, Payman Moharamzadeh MD, Saeid AlizadehArasi MD, Asghar Ghasemi PhD, Morteza Saeedi MD.*
Tranexamic Acid

• RCT in patients with spontaneous epistaxis

• Found that TXA had lower rates of bleeding at 10 minutes compared to anterior packing

• The anterior packing they used was “…several cotton pledgets soaked in tetracycline ointment.”
Tranexamic Acid

• May be useful

• Very limited information

• Need to compare to dissolvable packing
  • Research opportunity?
Floseal

• “Hemostatic matrix” of Gelatin and thrombin

• Two components mixed together into a paste
Economic Evaluation of Floseal Compared to Nasal Packing for the Management of Anterior Epistaxis

Andre Le, MD; Kednapa Thavorn, PhD; Andrea Lasso, MSc; Shaun J. Kilty, MD, FRCSC
Floseal

• Markov analysis

• Floseal was found to be more costly, and more effective (vs Merocel packs)

• Biggest downside is cost (~$500)
Floseal

Management of Persistent Epistaxis Using Floseal Hemostatic Matrix vs. traditional nasal packing: a prospective randomized control trial

Scott Murray¹,², Adrian Mendez¹,², Alexander Hopkins¹, Hamdy El-Hakim¹,², Caroline C. Jeffery¹,² and David W. J. Côte¹,²
Floseal

• No difference between Floseal and gauze packing in terms of effectiveness

• Floseal more comfortable
Floseal

• I use it sparingly

• Best if applied under endoscopic guidance
Special Situations

• HHT

• Skull base trauma
HHT

• Hereditary Hemorrhagic Telangiectasia

• Inherited condition where the nasal mucosa develops telangiectasias

• Extremely friable
HHT

• (Video)
HHT

• In this case, dissolvable packing MUCH preferred in the acute setting, as any non-dissolvable packing will risk significant epistaxis on removal

• Please refer (needs further workup from genetics, and to assess systemic manifestations)
Anterior Skull Base Fracture

• Epistaxis often complicates major head/face trauma

• Most patients will get CT head to rule out skull base fracture

• If bleeding out and hasn’t had CT, options are:
  • Intubate, pack oropharynx with gauze, and “clamp” nose
  • Place bilateral merocels along the floor
Anterior Skull Base Fracture

- Always stay low and you will be safe…
Thanks!