No More Bloody Mess: A Practical Guide to Ending ENT Bleeding

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Objectives
- Explain the relevant anatomical structures in ENT bleeding
- Best evidence for evaluation and treatment
- Discuss first level and advance techniques to stop ENT bleeding in the ED

Disclosures
- No relevant financial interests in any product discussed today

Three Things
- HIGHLY Anxiety Provoking for patient and provider
- Protect Yourself
- Methodological Approach
**Why is ENT Bleeding important??**

- High potential morbidity and mortality
- Multiple difficult to reach spaces
- Extension and swelling can involve
  - Airway
  - Airway
  - Airway

**What We Will Cover**

- Epistaxis
- Oropharyngeal Bleeding
- Trach and Cancer Bleeding
- Common ENT Hematomas and Complications

**Case**

- 48 year old male with URI in Flu Season. Cough, sneezing, presents with epistaxis x 2 hrs.
- Coughing up blood
- No hx of HTN
- What are you thinking first?
- What are some common causes of his bleeding?
Case Alternative…

What if he were 5 years old??

Epidemiology

- How common?
  - 60% of Adults have had epistaxis
  - <10% require medical attention

- Bimodal Distribution
  - <10
  - Between 45 - 65

Anatomy

- Anterior Bleeds
  - >90% of all episodes
  - Many arterial branches form Kiesselbach’s plexus (also called Little’s Area)
Etiology

- Nose Picking
- Dry Air
- Mucosal Hyperemia (Rhinitis)
- Chronic Excoriation (Cocaine use)

Associated Conditions

- Anti-Coagulation
- Hereditary Bleeding
  - Osler-Weber-Rendu
  - Von Willebrand Dx
- Neoplasm (esp in Asian pts.)
- Nasal Steroids (4x increase than controls)

Uncertain Associations

- Aspirin
  - Study of habitual bleeders -> No association of ASA use. Beran, JORS, 1986
  - Whereas…
  - Another study found a RR of 2.17-2.75 for ASA use. Tay, AORL, 1998
Uncertain Associations

- Hypertension??
- Some studies suggest correlation
- Studies designed to test the relationship have been unable to confirm
- Vasculopathic effects -> Long term risk
- May not cause epistaxis, but makes it harder to control…

Evaluation

- Initial Evaluation
  - Airway Assessment
  - Cardiovascular Stability

Evaluation

- History
  - Anticoagulation
  - Recent Trauma
  - Tumors
  - Drug Use
  - Interdigitation

Examination

- Set up
- Personal Protection
  - Face Mask
  - Gown
  - Gloves
- Dental Chair / Upright Bed
- Bright Light
- Emesis Basis for blood
Evaluation

- Lab Studies?
  - Generally no

- INR if anticoagulated
- CBC if massive or prolonged bleeding or if symptomatic (dizzy, lightheaded)
Initial Tamponade

- Patients may achieve their own hemostasis
- Instructions
  - Blow your nose – to remove clots
  - Spray Oxymetazoline (Afrin) to hasten hemostasis
  - Pinch Alae tightly against septum for 10-15 minutes

Elbow/knee/palm/chin

Initial Tamponade

- Oxymetazoline (Afrin)
- Careful with Neo-Sinephrine
  - Case reports of intra-operative death
- Careful with Cocaine
  - Further Case reports of MI
- No Acute BP reduction
  - Not been studied, not recommended

Examination

- Pre Treatment
  - Anesthetic
    - Lido
    - Lido with Epi
  - Cocaine?? Careful (case reports of MI)
- Have patient blow nose gently to remove clots
Examination

- Use a Nasal Speculum
  - Oriented superior/inferior
  - Place index finger against alae against superior blade of speculum
    - Stabilizes speculum
    - Inferior blade moves
    - Less patient discomfort

- Evaluate Kiesselbach’s plexus
  - >90% of bleeds originate here
  - Vestibule, Turbinates, etc.

- Often the source can’t be found
  - Anterior source which has stopped
  - Posterior Source

Anterior vs Posterior Source

- Can be difficult to distinguish
- Anterior Epistaxis can bleed profusely
  - High volume
  - Drips down throat (if patient tilts head)
  - Posterior Bleeds may stop spontaneously

- In difficult cases
  - Bilateral Anterior Packing
  - If still bleeding -> posterior source
Treatment - Anterior

- First Line
- Cautery
  - Silver Nitrate Sticks
  - Adequate Anesthesia
  - Roll sticks over bleeding source
  - (I use a few rolling them together to minimize time)
  - White precipitate results

Treatment - Anterior

- Next → Nasal Packing
  - Prior Packing
    - Ribbon Gauze (stacking layers onto floor of cavity)
  - Merocel™ Sponges/Tampon
    - Synthetic Foam Polymer (less S. Aureus)
  - Nasal Balloon Catheters

Treatment - Anterior

- Merocel™ Sponge
  - Proper Patient Position
  - Topical Anesthetic
  - Trim Insertion Edge
Treatment - Anterior

- Merocel™ Sponge
  - Coat sponge with bacitracin
  - Insert tampon by sliding along floor of nasal cavity until entire length is in
  - (If it sticks out, it is NOT deep enough)
  - Expand Sponge with NS

Treatment - Anterior

- Nasal Balloon Catheters
  - Easier to use
  - Epistat™
  - Storz T-3100™
  - Rapid Rhino™
    - 5cm for Anterior
    - 7.5, 10cm for Posterior

Treatment - Anterior

- Rapid Rhino™
  - Balloon catheter
  - Large Low pressure balloon
  - Carboxymethylated Cellulose Mesh
  - Self Lubricates when placed in sterile water
  - CMC mesh fibers act to promote thrombosis
Treatment - Anterior

- **Rapid Rhino\textsuperscript{tm} Technique**
  - Inflate with air.
  - Stop when pilot cuff is round
  - Re-eval after 10 min.
  - Add more air if necessary.
  - Tape cuff to cheek.

- **Thrombogenic Foams/Gels**
  - Promote thrombogenesis
  - TXA? – topical application of injectable form
  - Fibrin Glue
  - Thrombin Gel/Foam
    - Each described as useful if cautery fails
    - Floseal described as effective in posterior bleeds
      - Cote, JHNS, 2010
    - Examples: Surgicel, Gelfoam, Avitene, Floseal, Quixil

- **Persistent Bleeding**
  - May need to pack other side
  - Provides counter force to packing
  - May require ENT consult

  - Packing successful 90-95% of time
  - If no hemostasis – consider posterior source

- **Antibiotics and Toxic Shock Syndrome**
  - 16 per 100,000 post operative packings
  - Unclear incidence after ED packing
  - No evidence to suggest systemic antibiotics prevent TSS
  - UTD recs not giving them
  - 2012 study. 150 patients no infections.
  - Many ENT specialists still do…
Treatment - Posterior

- Balloon Catheters
  - Similar Insertion principle
  - Often with two balloon system
    - Posterior (smaller volume)
    - Anterior (larger volume)

Treatment - Posterior

- Balloon Catheter
- Insertion
  - Similar positioning
  - Insert until length is within nare
  - Inflate Posterior Balloon
  - Gently retract until resistance is met (balloon lodges)
  - Inflate Anterior Balloon

Treatment - Posterior

- Foley Catheter (fallen out of favor since the dual balloon catheters)
- Similar principle
- Insert into nare until balloon past posterior nasal cavity

Treatment - Posterior

- Inflate Foley with 5-7ml NS
- Withdraw until it lodges
- Gently add a few more ml (3-5ml)
- Clamp Catheter in place
- Ensure padding between clamp and nare
  - Again, out of favor. Don’t let clamp touch skin.
Treatment - Posterior

- Finally:
  - Place anterior packing as well
  - Hospitalization
  - ENT consultation
  - Prolonged packing (> 72 hours) increases complications
    - Necrosis
    - Infections
    - ? TSS

- Further Interventions
  - Surgical treatment
    - Endoscopically
    - Ligation
  - Angiographic Embolization increasingly common
    - ~ 90% effective
    - Increase in sig. complications (CVA, blindness)

Epistaxis Summary

- Protect Yourself
- Use Oxymetazoline
- Silver Nitrate/Thrombin foam
- Anterior Packing (easy balloon caths)
- 24-48 Fu with ENT (no abx)
- Posterior Packing gets admitted
- +/- Angiographic Embolization
Case
- 12 year old female presents with oropharyngeal bleeding
- She is 1 day post operative tonsillectomy and went home a few hours ago
- She is not dizzy but her parents are very worried
- What is your stepwise approach??

Oropharyngeal Bleeding
- Post Surgical Bleeding
  - Tonsils/Adenoids
  - Post Dental Extraction

Oropharyngeal Bleeding
- Post Tonsillectomy (most common)
- Step Wise Approach

- Oxymetazoline drops down the nare on the affected side
- Drips down and causes constriction
- (Neo-Sinephrine second line)
- Gargling the solution may help
Oropharyngeal Bleeding

- Post Tonsillectomy (most common)
- Step Wise Approach
- Step 2
  - Epinephrine 1:1000 on 2x2 held in place by patient or clinician
  - Rapid vaso-constriction so absorption negligible

Oropharyngeal Bleeding

- Post Tonsillectomy (most common)
- Step Wise Approach
- Step 3
  - Silver Nitrate

Oropharyngeal Bleeding

- Post Tonsillectomy (most common)
- Step Wise Approach
- Step 4
  - Topical Cocaine
  - Last resort, but effective

Case

- 39 year old male presents to the ED 4 hours post dental extraction.
- He states the bleeding just won’t stop.
- He is anxious and frustrated.
Oropharyngeal Bleeding

- Post Extraction
- Step Wise Approach

Step 1
- Direct Pressure
- Often patient has not been applying adequate pressure.
- Gauze 2x2 then bite down for 30 minutes
- Remember the surrounding teeth may prevent pressure if packing not tall enough

Step 2
- Application of Tea bag
- Historical Wisdom
- Tannic acid has vasoconstrictive properties
  - (Using it in hemorrhoid treatment)

Step 3
- Application of topical Gel Foam, or Thrombin
- With either
  - Direct Pressure
  - Sewing in
Oropharyngeal Bleeding

- Post Extraction
- Step Wise Approach
- Step 3.5
  - Other topical Vasoconstrictors
  - Gelfoam/TXA?
  - THEN Cocaine soaked Q tips

Oropharyngeal Bleeding

- Post Extraction
- Step Wise Approach
- Step 4
  - Silver Nitrate if bleeding has slowed

Case

- 65 year old male with cancer of tongue/OP requiring trach presents with bleed from trach site x 2 hours
- Patient was cleaning and replacing trach when the edge starting bleeding
- Hasn’t been able to control it
Tracheostomy Bleeding

- Step wise approach
- Really only a few steps

Step 1
- Topical Vasoconstrictor/pressure
  - Lido with Epi
  - Epi 1:10000 or 1:1000
  - Cocaine
  - Careful you only use it topically
    - Clearly risk if aspiration into lungs

Step 2
- Silver Nitrate
  - Granulation tissue which gets irritated
  - Definitive Treatment
  - Leave trach out for 24 hours
Cancer Bleeding
- Similar Approach to Oropharyngeal Bleeding
  - Topical Vasoconstrictors

Step Wise Approach
- Step 1
  - Direct Pressure

Cancer Bleeding
- Step Wise Approach
- Step 2
  - Other topical Vasoconstrictors
  - Cocaine soaked Q tips

Cancer Bleeding
- Step Wise Approach
- Step 3
  - Application of topical Gel Foam, Thrombin, TXA (with direct pressure)
Cancer Bleeding

- Step Wise Approach
- Step 4
  - Silver Nitrate if bleeding has slowed

Case

- Case of the 26 year old pugilist…
- After a night of drinking he gets into a fight
- He sustains a direct blow to his nose
- He thinks it might be broken
- You see this…
Common Hematomas

- Nasal Septal Hematoma
  - What is it?
    - Hematoma between the nasal septum and the perichondrial surface.

Nasal Septal Hematoma

- Why is it important?
  - If not drained, it can lead to a deformity known as the saddle nose

Bilateral

- Drainage
- Anesthesia - Lidocaine
- Incision with scalpel
- Packing (Anterior, Bilateral)
- Start on Antibiotics (with MRSA covg)
- Urgent ENT referral
Case

- 15 yo boy brought to ED by guardian for right ear swelling after a wrestling tournament. No other complaints. He has his medals with him.
Auricular Drainage

- Skin approximated to the cartilage, otherwise risk necrosis and deformity
- Aspiration vs incisional
- Pressure dressing vs suture
- All require close follow-up with ENT
- High risk of developing cauliflower ear

Cauliflower Ear – the dreaded complication
Case

- 38 yo man was working at the Salvation Army when a BOOK fell on his ear, thus winning the most improbable chief complaint of the morning: ear vs book.
- He now complains of ear swelling.
Auricular Bleeding

- Summary
- Drain
- Pressure
  - Sutures best
  - Bandages don’t really work
- Don’t mess with it
- F/U ENT 24-48 hours

Summary of this lecture

- Epistaxis
  - Anterior
  - Posterior
- Oropharyngeal
- Tracheostomy Bleeding
- Cancer Bleeding
- Common Hematomas
  - Nasal
  - Auricular
Closing Thoughts…

- Personal Protection
- Adequate Lighting
- Go in with a Strategy

Three Things

- HIGHLY Anxiety Provoking for patient and provider
- Protect Yourself
- Methodological Approach

Thanks!!!

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If you have further questions
- O/p bleeding
  - 1 part H2O2, 1 part listerine, 1 part txa, 1 part aphrin. Gargle

- Mention ring blocks for auricular hematomas
- Add in palatine artery block

- Pepper 2012 J Laryng & Otol
  - Quasi experient
  - 37% ENTs in UK give them
  - 3 months before and after protocol change
  - 3 months with amox/clav vs 3 months without
  - 78 pts in before group 6 otalgia, no infection
  - 71 pts in after 8 otalgia, 0 infections
  - 95% CI about 2%