

Project: Ghana Emergency Medicine Collaborative

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Evaluation and Management of Epistaxis



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July 8, 2008

Objectives

- Epidemiology
- Review of Anatomy
- Pathology/Etiology
- Evaluation of the patient with Epistaxis
- Management
 - Anterior Epistaxis
 - Posterior Epistaxis
 - Alternative Therapies
 - Complications of Packing

Hippocrates – 4th Century B.C.

Nosebleeds occur in those who are beginning to have feelings of lust or who are getting the signs of manliness

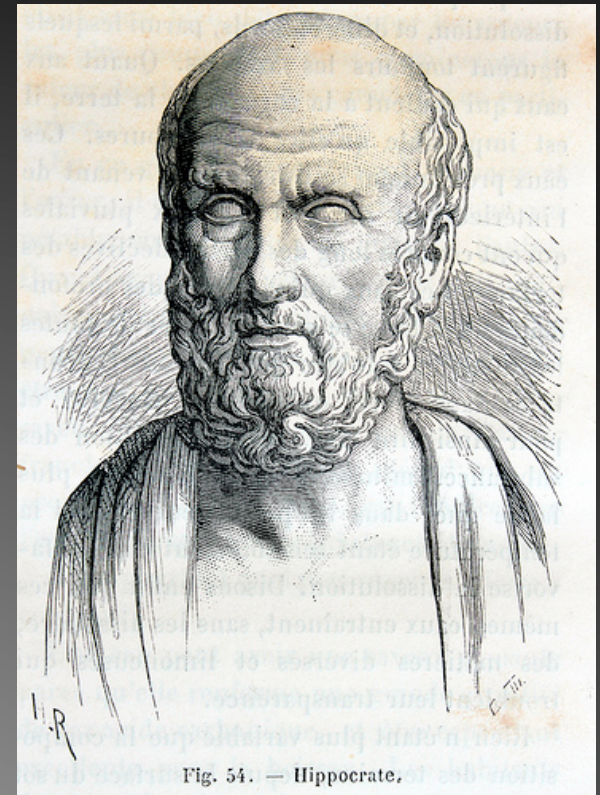


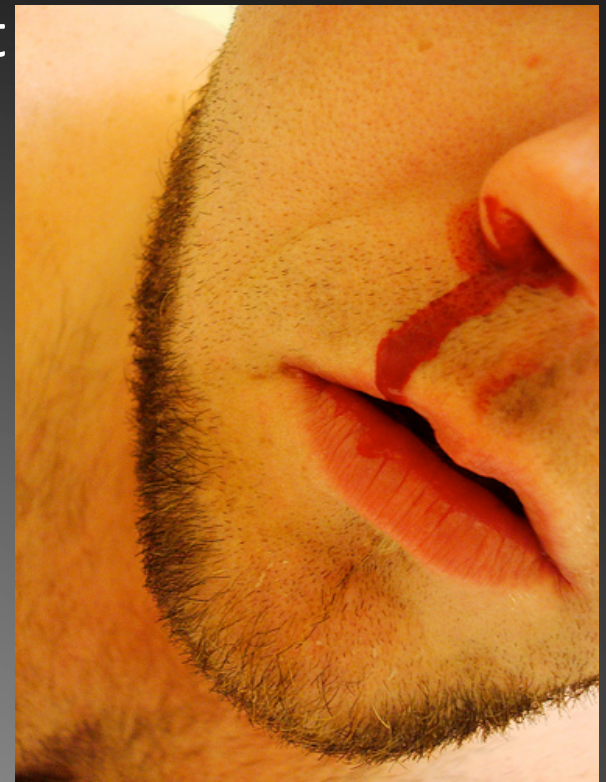
Fig. 54. — Hippocrate.



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Epidemiology

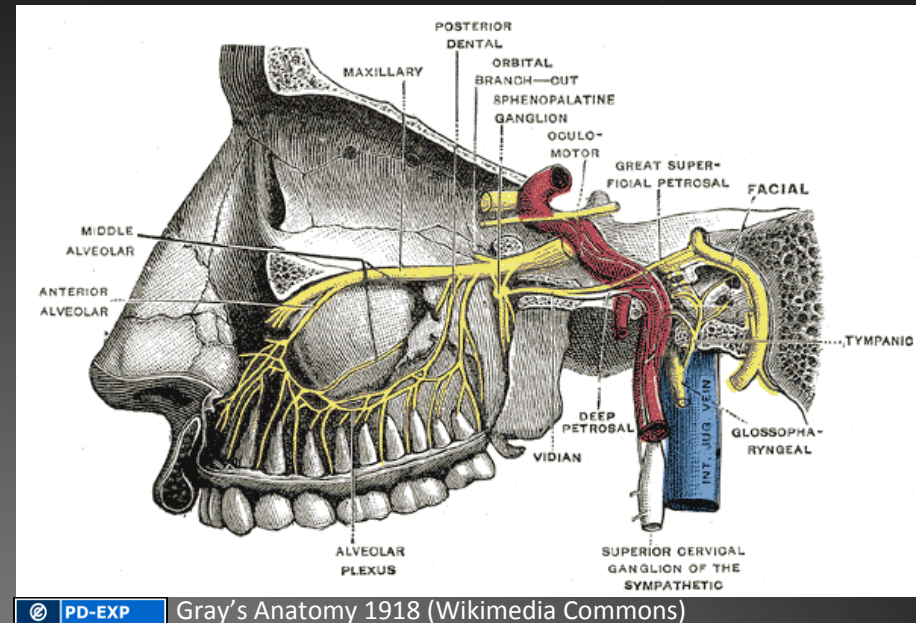
- 60% of population with at least one nosebleed
- 6-10% will require medical treatment
- 1.6/10,000 will require admission
- Bimodal age distribution
 - High Incidence < 10 y/o
 - 30% of all children 0-5 y/o
 - 56% of all children 6-10 y/o
 - Second peak: 45-65 y/o
- Bleeding categories
 - Anterior (90-95%)
 - Posterior (5-10%)



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Anatomical Considerations


- Nasal Cavity
- Functions
 - Respiratory
 - Protective
 - Drainage
 - Olfactory
- Anterior Nasal Cavity = Little's Area
 - Kesselbach's Plexus
 - Anterior/Posterior Ethmoidal Arteries
 - Sphenopalantine artery
 - Superior Labial Artery
 - Greater Palantine Artery
- Posterior Nasal Cavity
 - Sphenopalantine Artery
 - Woodruff's Plexus



Etiology of Epistaxis

- 85% of cases are idiopathic
- Four Broad Categories:
 - Trauma, Infectious, Tumors/Lesions, Disorders of Hemostasis
- Traumatic Causes
 - Digital Trauma
 - Facial Trauma
 - Mucosal Drying
 - Foreign Body
 - Septal Perforation
 - Substance Inhalation
 - Barotrauma
 - Environmental Irritants



 Aaron Smith 2007 (Flickr)

Etiology of Epistaxis

● Infectious Etiology

- URI
- Sinusitis
- Rhinitis
- Tuberculosis
- Mononucleosis
- Scarlet Fever
- Rheumatic Fever
- Syphilis



 [Sevoo \(Flickr\)](#)

Etiology of Epistaxis

- Tumors/Lesions
 - Nasopharyngeal Neoplasms
 - Sinus Neoplasms
 - Benign Nasal Polyps
 - Juvenile Angiofibroma
 - Metastatic Lesions
 - Nasal Hemangiomas
 - HHT (Hereditary Hemorrhagic Telangiectasia)



Hereditary Hemorrhagic Telangiectasia

- Osler-Weber-Rendu Disease
- First described in 1864
- Mucocutaneous telangiectasias + AV Malformation
- U.S. Incidence = 1/16,500
- Curacao Criteria
- Recurrent Epistaxis (90%)
- Treatment
 - Standard therapies
 - Surgical intervention



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[Herbert L. Fred, MD and Hendrik A. van Dijk \(Wikimedia Commons\)](#)

Etiology of Epistaxis

○ Disorders of Hemostasis

○ Platelet Disruption

- Leukemia
- Thrombocytopenia
- Von-Willibrand's Disease
- Medications (Aspirin, Plavix, NSAID's)

○ Clotting Cascade Disruption

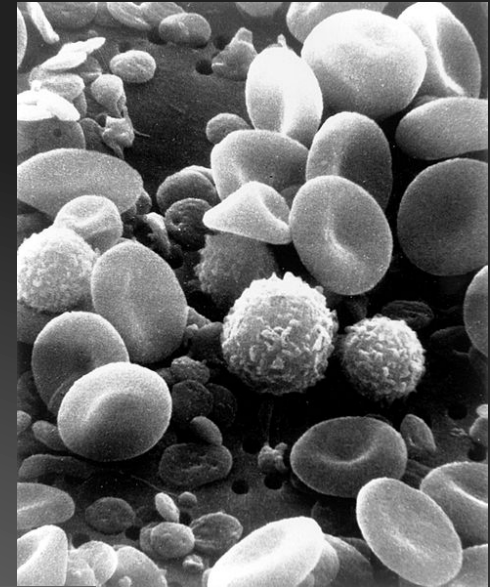
- Hemophilia
- Vitamin K Deficiency
- Anti-coagulant Medications (Coumadin, Heparin, Lovenox)

○ Aplastic Anemia

○ Polycythemia Vera

○ Systemic Diseases

- Hepatic Disease
- Uremia
- Alcoholism



PD-GOV

[National Cancer Institute \(WikimediaCommons\)](#)

What about Hypertension?

- No clear association between acute hypertensive episode and epistaxis
- Chronic Hypertension = Vascular Damage
 - Increases risk of epistaxis
- Acute hypertension = Prolonged Epistaxis

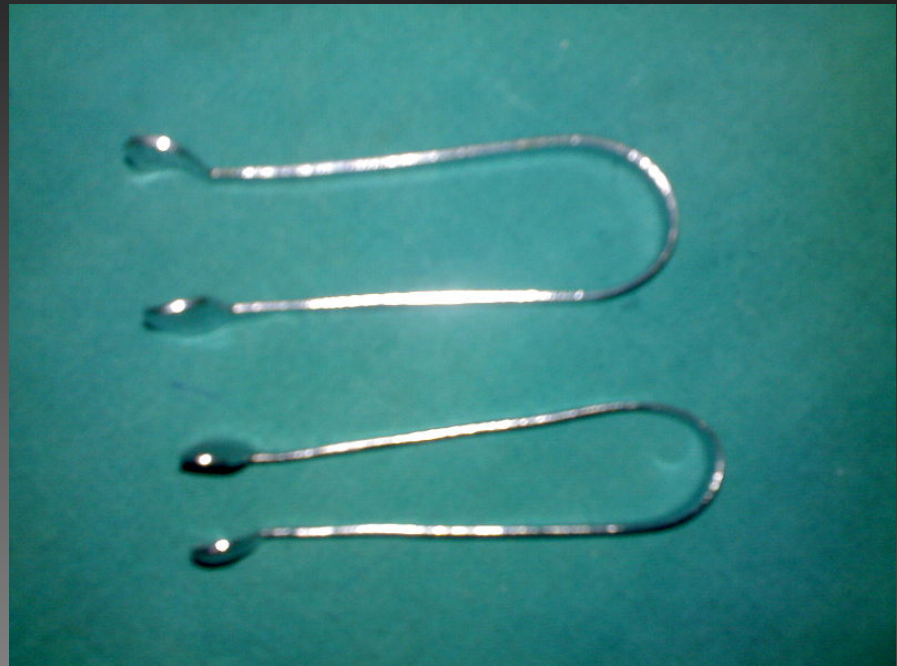


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Clinical Evaluation

- History
 - Location/Severity
 - Previous Episodes
 - PMH/Medications
 - Facial Trauma
 - Recent Infections
 - Recreational Drug Use
- Physical Exam
 - Nasal Speculum
 - Suction
 - Adequate Light
 - Posterior Oropharynx
- Laboratory Studies
 - CBC, PT/INR, PTT, Type and Screen

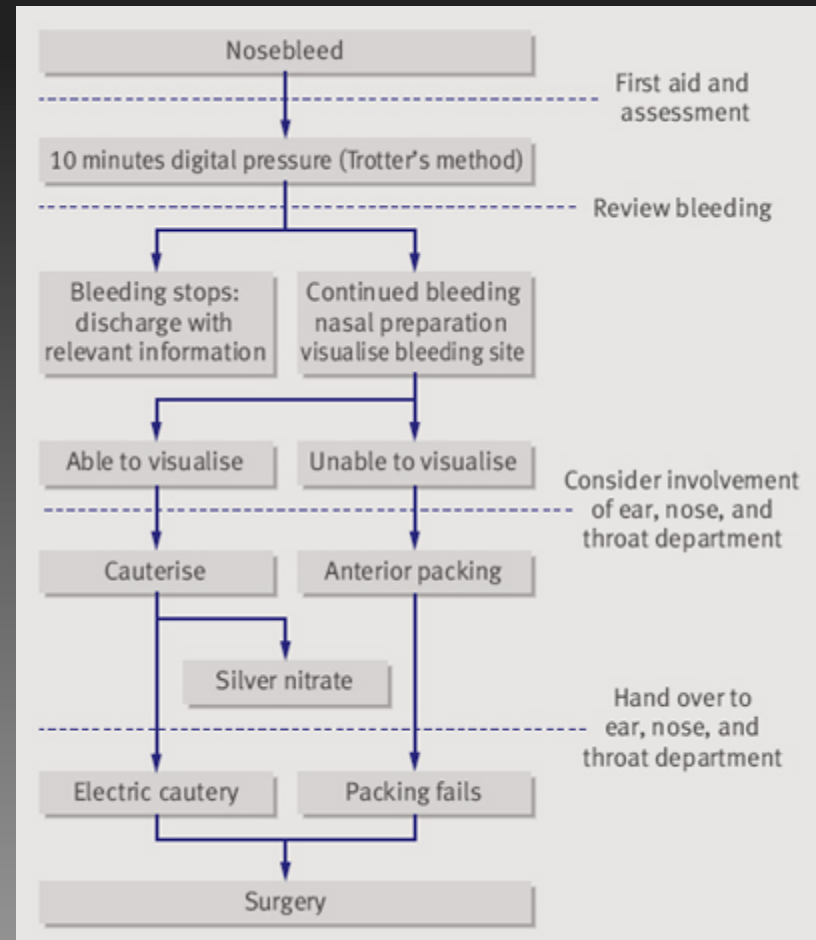


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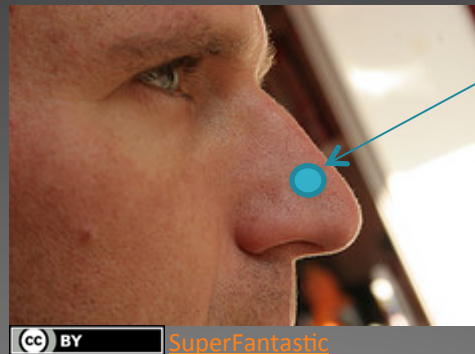
Anterior Epistaxis Management

- Sample Algorithm
- First Aid Maneuvers
 - Direct Pressure
- Nasal Preparation
 - Anesthesia
 - Vasoconstrictors
- Cautery
 - Silver Nitrate Sticks
 - Electocautery



Digital Pressure (Trotter's Method)

- Application of digital pressure over Kiesselbach's plexus for at least 15-20 minutes



Pinch here

Merocel Packing

- ⦿ Nasal Tampon inserted horizontally after lubrication of pack with bacitracin or KY-Jelly and then allowed to expand after saturation with normal saline.

Rapid Rhino

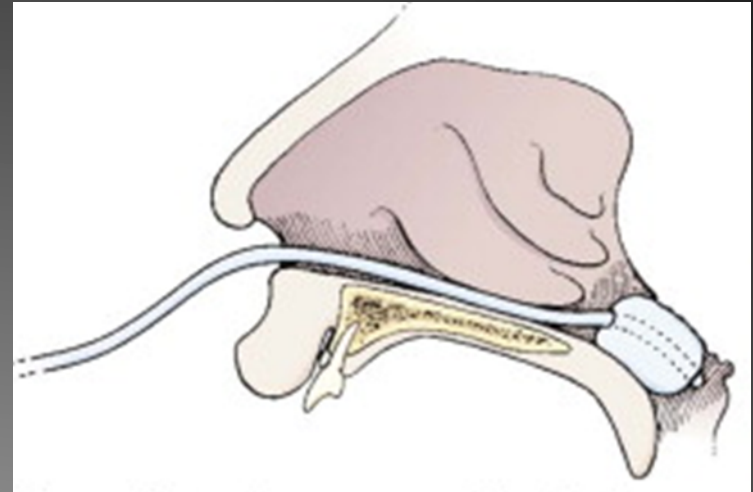
- Balloon Catheter coated in carbocymethylcellulose mesh which acts as a lubricant and platelet aggregator.
- The catheter is soaked in water for 30 seconds and then inserted into the nose along the base of the nasopharynx.
- The cuff is then inflated with air/water until it provides adequate tamponade.

Formal Anterior Packing

- Pack the nasal cavity with xeroform ribbon gauze from the floor upwards in an accordion fashion using a bayonet forceps leaving a four inch tail on each end out of nares

Posterior Epistaxis

- ◎ Foley Catheter
- ◎ Specialized products
 - ◎ Brighton Balloons
 - ◎ Simpson Balloons
- ◎ Formal Posterior Packing



Traditional Posterior Packing

1. Catheter through affected nostril and through the nasopharynx is drawn out the mouth by ring forceps.
2. A gauze pack is secured to the end of the catheter with umbilical tape or suture material, and long tails protrude from the mouth.
3. The gauze pack is guided through the mouth and around the soft palate
4. The gauze pack in the posterior nasal cavity maintaining tension on the catheter with a padded clamp or firm gauze roll placed anterior to the nostril.

Alternative Treatments

- Surgical Therapies

- Electrocautery
- Septal Surgery
- Arterial Ligation

- Alternative Treatments

- Angiographic Embolization
 - Fibrin Glue
 - Laser Therapy
- Hot Water Irrigation

Complications of Packing

- ⦿ Failure to control bleeding
 - ⦿ Toxic Shock Syndrome
 - ⦿ Blockage of Duct drainage
- ⦿ Nasovagal Reflex (Controversial)
 - ⦿ Obstructive Sleep Apnea
 - ⦿ Airway obstruction
- ⦿ Removal can cause re-bleeding
 - ⦿ Pressure necrosis

Summary

- Epistaxis is common complaint affecting 60% of population at some point in lifetime
- Key to evaluation is differentiation between anterior and posterior bleeding source
 - Anterior = 90-95 % (from Kiesselbach's plexus)
 - Posterior = 5-10% (from sphenopalantine artery)
 - Consider possible causes for epistaxis with recurrent or difficult to control nosebleeds
- Non-invasive techniques will stop the majority of epistaxis (Trotter's method, cautery, vasoconstrictive compounds)
- Difficulty to control epistaxis may require nasal packing
- Consider antibiotics while packing in place
- Posterior nasal bleeds should all be hospitalized

Questions

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