Epistaxis

An overview of diagnosis and managment

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Introduction

- The purpose of this talk is to outline the anatomy, etiology and basic management of epistaxis.

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Topics of Discussion

- Who gets Epistaxis?
- Anatomy and Blood Supplly
- Etiology
- Non-Surgical Management
- Surgical Management
- Embolization

Who gets Epistaxis?

- All age groups are affected
- There is no sex predilection
- Somewhat higher incidence during colder months when URTI's more frequent and temp and humidity fluctutations more dramatic.
- Also common in hot dry climates with low humidity

Epistaxis

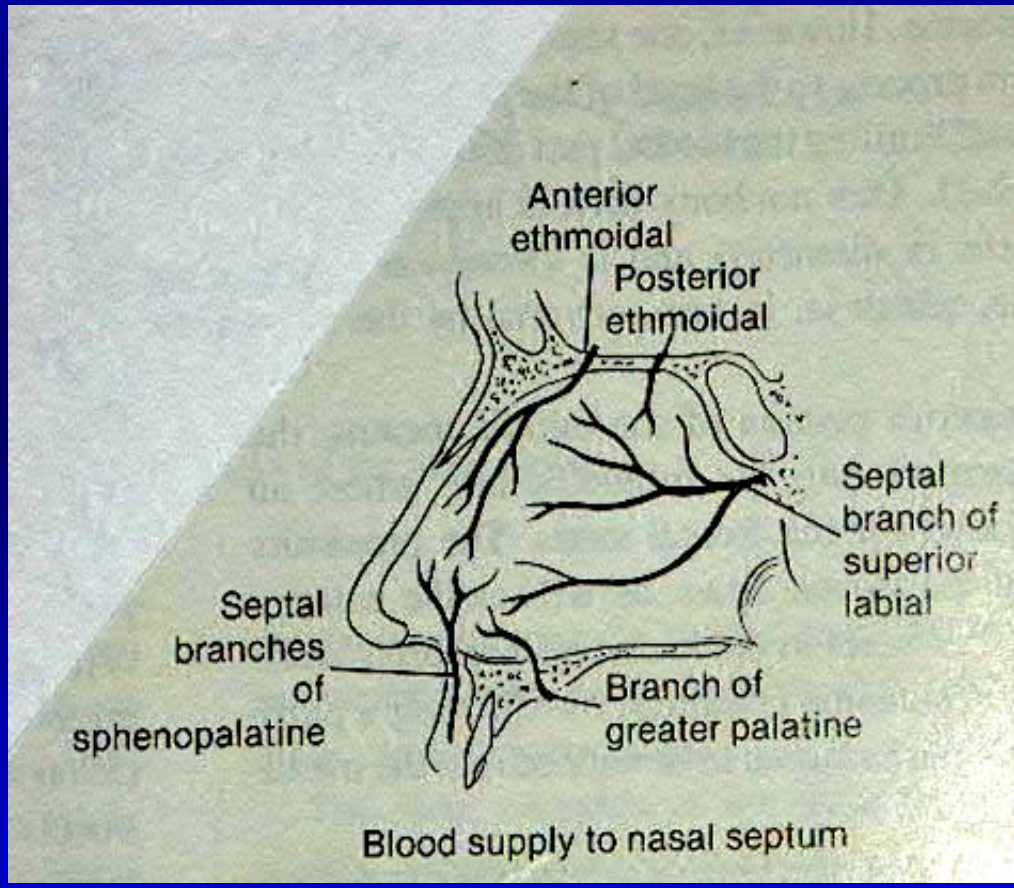
- Most patients handle this without a physician
- 5-10% require a physician and may require hospitalization, blood transfusion and surgical intervention.
- If not successfully managed, epistaxis may lead to life threatening consequences.

Anatomy and Blood Supply

- The external carotid artery supplies blood to the nose via the maxillary artery and the facial artery.
- The facial artery supplies the superior labial artery which has 2 branches; the septal branch and the alar branch.
- The sphenopalatine artery is a terminal branch of the maxillary artery. It enters the nasal cavity at the posterior end of the middle turbinate through the sphenopalatine foramen.

Nasal Septum

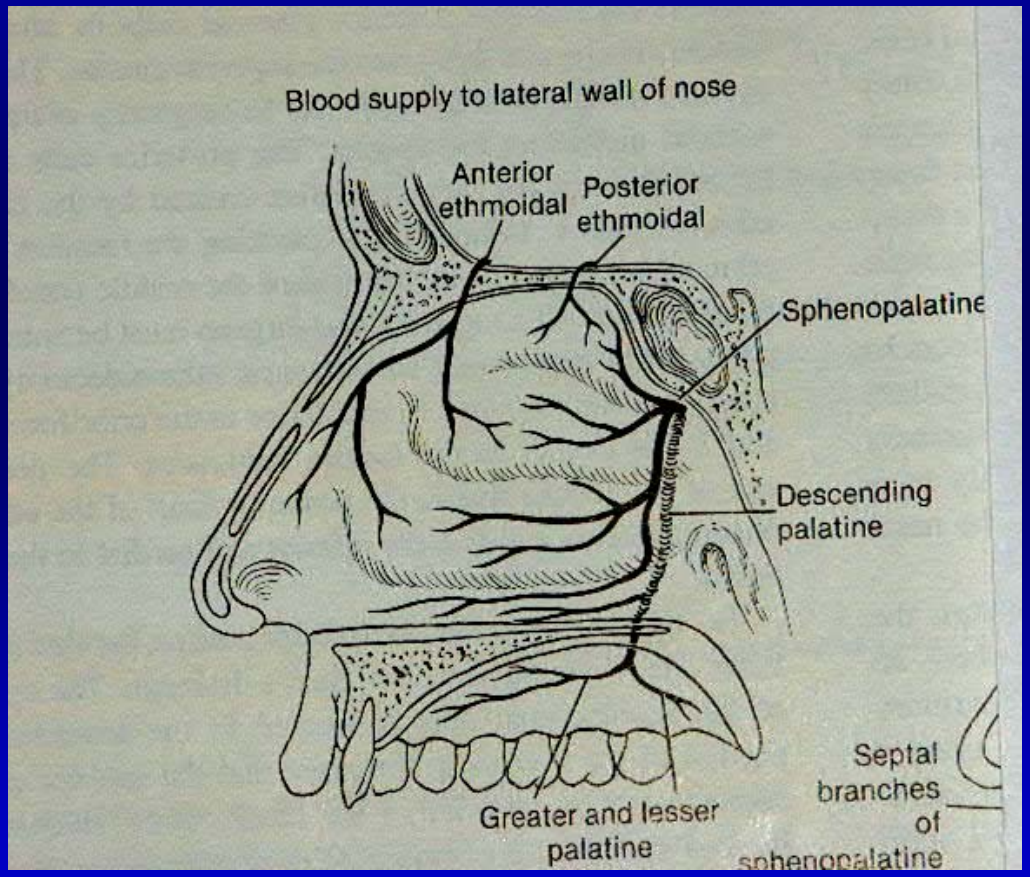
- 90 % of bleeds are anterior and originate from Kiesselbach's plexus where branches of sphenopalatine, anterior ethmoidal and superior labial artery anastomose.



Blood supply to nasal septum

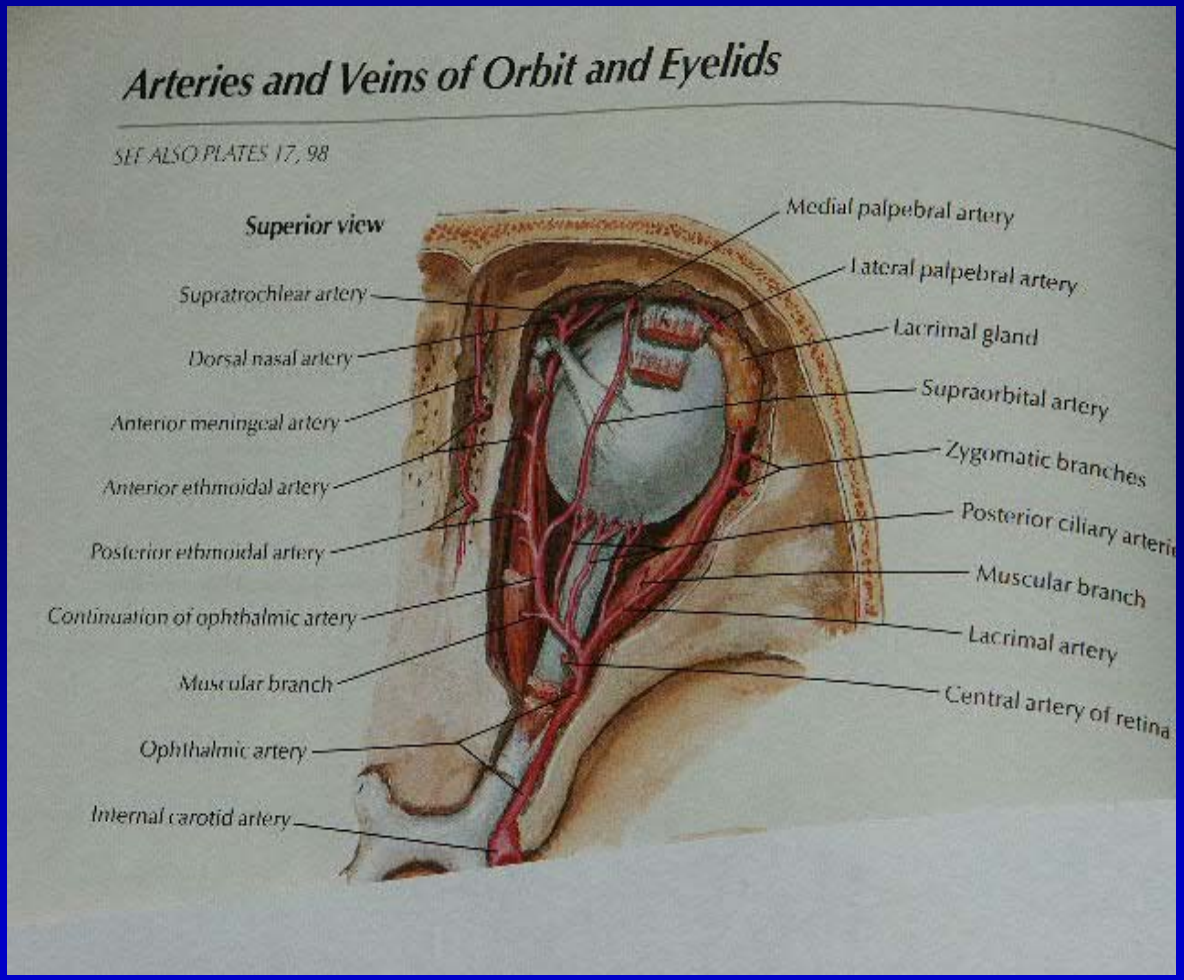
Lateral Nasal Wall

- Posterior bleeds are most commonly from the sphenopalatine artery at the entry zone of the artery behind the middle turbinate.



Anatomy and Blood Supply

- Internal Carotid artery
- This supplies the nose via the ophthalmic artery as it travels through the cavernous sinus.



Etiology

- Local Disorders
- Neoplastic Disorders
- Systemic Disorders
- Hematologic Disorders
- Medications
- Genetic diseases

Etiology

- Local Disorders
  - Trauma
  - Foreign bodies
  - Surgical procedures
  - URTI, Sinusitus, Atrophic rhinitis
  - Chemical irritants

Etiology

- Neoplastic disorders
  - Malignant or benign

Etiology

- Systemic disorders
  - Atherosclerotic disease associated with hypertension
  - Hepatic or renal disease

Etiology

- Hematologic disorders
  - Myeloma
  - Leukemia
  - Hemophilia
  - Lymphoma
  - Anemia
  - (replace deficient factors to correct bleeding)

Etiology

- Medications
  - NSAIDS (poison platelets)
  - Coumadin
  - Herbal medications ie: Garlic

Etiology

- Genetic Diseases
  - Osler-Weber Rendu disease

Initial Management

- ABC’s
- Management of airway and fluid replacement.
- Optimize blood pressure
- Pain management as needed
- In simple cases, alar pressure and calming the patient are effective

History

- Which side did bleeding begin?
- Is Pt swallowing blood?
- Duration of bleeding and estimated loss
- Previous epistaxis? How was it treated
- Medical Hx: HTN, liver disease ETOH use
- Any medications, ie anticoagulants, NSAIDS, herbal meds.
- Any trauma, surgical, non surgical.

Physical Exam

Physical exam

- Gown and Eye protection
- Headlamp
- Suction
- Nasal speculum
- Bayonnet Forceps
- Topical agent to provide anesthesia and vasoconstriction.

Investigations

- INR, PTT, CBC

  In coagulopathic patients consider;

  bleeding time

  assess clotting factor deficiencies (hematology consult)

Cautery for Epistaxis

- Chemical cautery ($AgNO_3$)
- Electrocautery
- Laser Cautery

Anterior Packing

Anterior Packing

- Various materials are available; vaseline guaze, Merocel packs.
- Toxic shock may result from growth of S. Aureus on pack.
- Packing also obstructs sinus ostia predisposing to sinusitus.
- Pack is left for 2-5 days allowing vessel to thrombose.
- The pack works by pressure, and creating mucosal edema and inflammation.
- The use of prophylactic antibiotics is controversial.

Coagulopathic patient

- Correct coagulopathy
- Correct blood pressure
- Do not place a pack that needs to be removed if it can be helped
- Ie: use gelfoam, surgicel, Merogel packs.
- If problem is from coagulation cascade, bleed is easily controlled with gelfoam and Thrombin bypassing cascade converting fibrinogen to fibrin.

Posterior Packing

- Indications include bleeding not managed with an anterior pack
- When bleeding is noted primarily in the throat.
- When a posterior bleed visualized

Posterior Pack

- Many options for this
  - Foley posterior pack with anterior pack afterwards.
    - Use sterile water in baloon! Not saline which will crystalize.
  - Other options include guaze rolls placed via oral cavity into nasopharynx (poorly tolerated)
- Very important to protect the nasal columella or alar rim from necrosis when placing a posterior pack.

Posterior Packs

- Very uncomfortable. Usually left for 3-5 days.
- Potential complications include;
  - Hypoventilation, hypoxia, hypercapnea, respiratory failure and cardiac arrythmias.
  - Admission is required with posterior packs in place.
- Posterior packs can cause sleep apnea and may stimulate a nasovagal reflex resulting in bradycardia, decreased cardiac output and inhibition of respiration.

Surgical Management

- Indicated in patients where bleeding not controlled by packing, or packing not appropriate.
  - External carotid artery ligation (not very effective)
  - Ethmoidal artery ligation
  - Ligation of maxillary artery
    - Endoscopic vs Open

Transarterial Embolization

- Angiography used to identify vessels and block them with gelfoam plugs.
- Not appropriate for internal carotid branches because of risk of stroke.
- Various other contraindications.
- Success rate is 90%
- Risk of stroke 0.1-1%