«Astana Medical university» JSC
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SIW

Epistaxis

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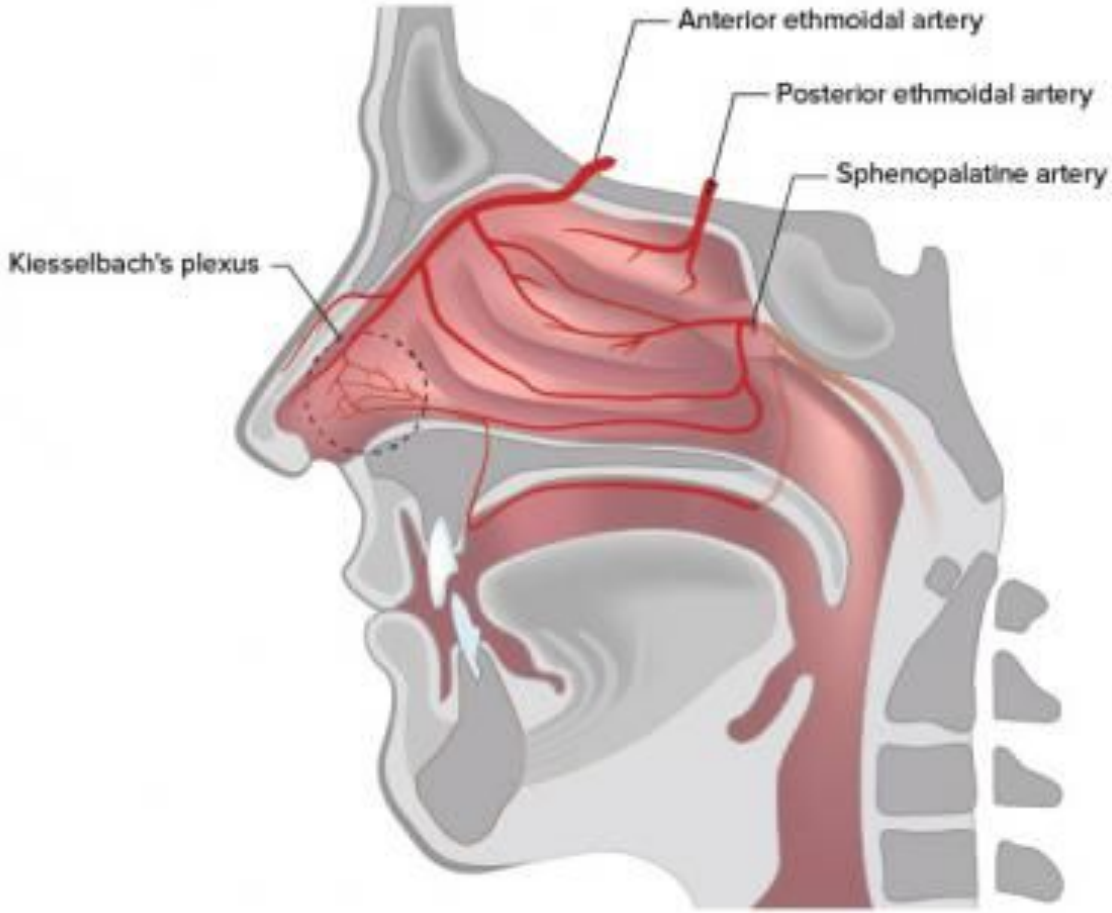
Plan:

- Epistaxis
- Classification
- Etiology
- Pathogenesis
- Clinical manefestations
- Diagnosis
- Differential diagnosis
- Emergency care
- Conclusion
- Bibliography

Epistaxis (Nosebleed)

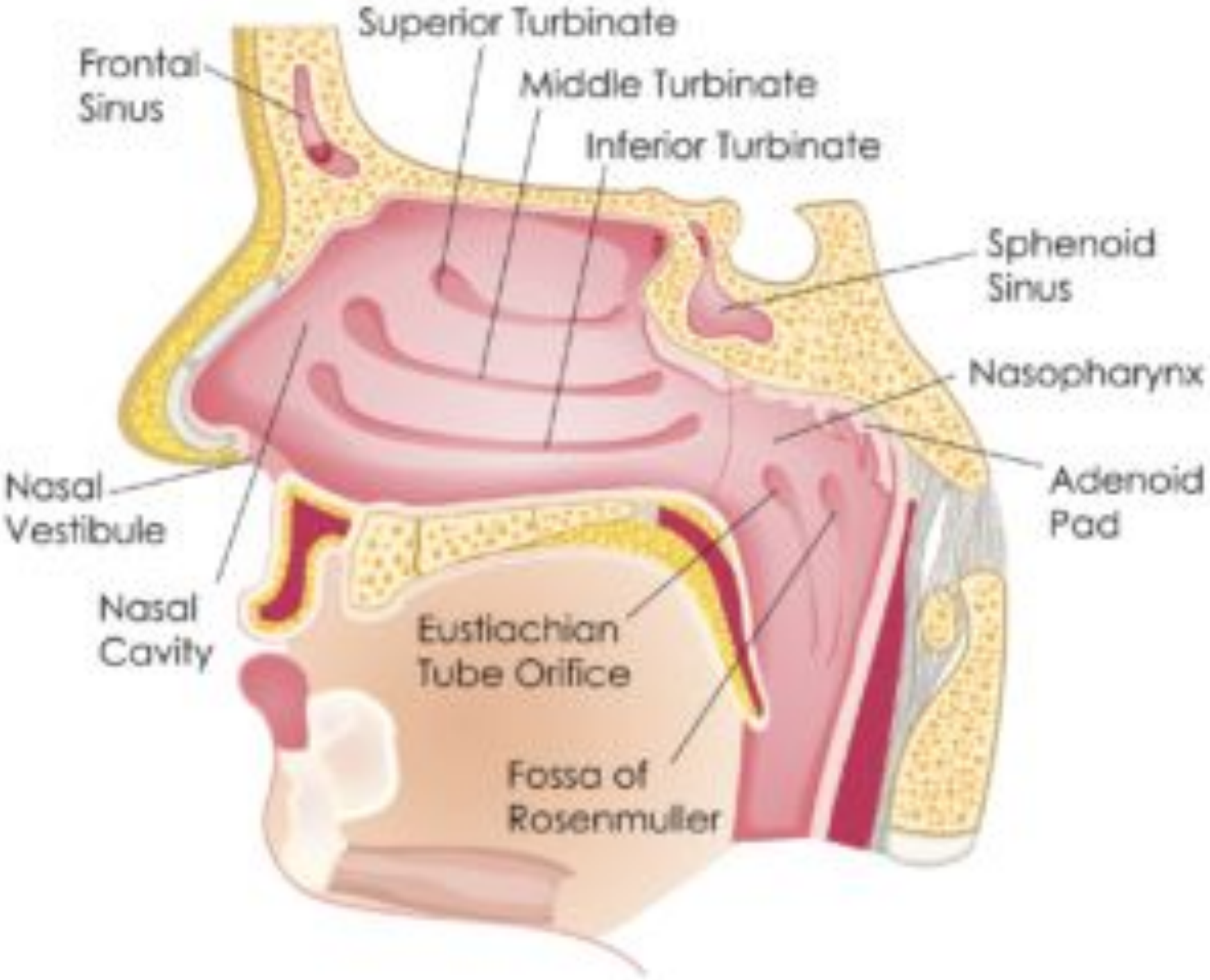
Epistaxis is defined as bleeding from the nostril, nasal cavity, or nasopharynx.

Nosebleeds are due to the bursting of a blood vessel within the nose.



Sites of epistaxis

1. Little's area in 90% of the cases
2. Above the level of middle turbinate
3. Below the level of middle turbinate
4. Posterior part of nasal cavity
5. Diffuse, both from septum and lateral nasal wall
6. Nasopharynx

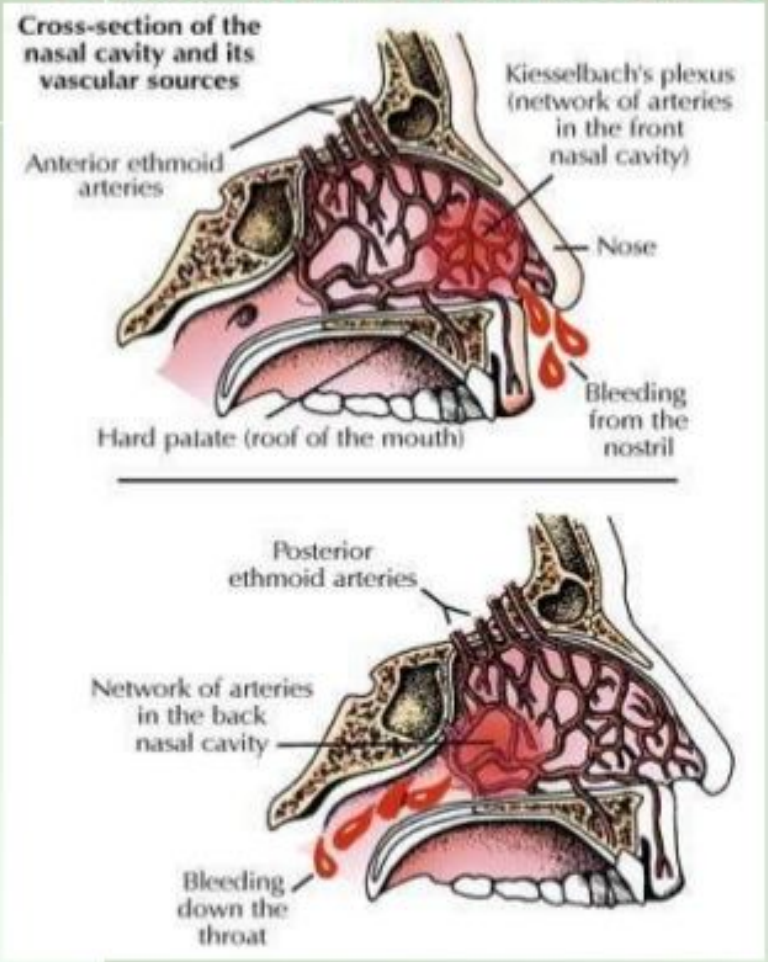

Superior Turbinate
Frontal Sinus
Middle Turbinate
Inferior Turbinate
Sphenoid Sinus
Nasopharynx
Adenoid Pad
Nasal Vestibule
Nasal Cavity
Eustiachian Tube Orifice
Fossa of Rosenmuller

Classification of epistaxis

- by location;
- by frequency of occurrence (recurrent, which is repeated intermittently; sporadic, rarely or once);
- by mechanism of manifestation;
- by quantity of lost blood.

By location:

Classification of epistaxis



- Anterior epistaxis
  - Blood comes out through the nostrils

- Posterior epistaxis
  - Blood flows back into the throat.
  - Coffee coloured vomitus

Anterior epistaxis
Posterior epstaxis
unilateral bleeding
bilateral bleeding

The differences between anterior and posterior epistaxis

	Anterior	Posterior
Incidence and site	More common Mostly from the little's area or anterior part of lateral wall.	Less common Mostly from posterior part of nasal cavity.
Age	Mostly occurs in children and young adults.	Occurs after 40 years of age.
Cause	Mostly trauma or by nasal mucosal dryness.	Spontaneous; often due to hypertension or arteriosclerosis.
Bleeding	Usually mild and can be controlled by local pressure or anterior pack.	Bleeding is severe and requires hospitalisation; postnasal pack often required.

By mechanism of manifestation:

- Capillary (with damage to shallow surface vessels);
- Venous (with ruptured veins of the nasal cavity);
- Arterial (with damage to large arteries).

By quantity of lost blood:

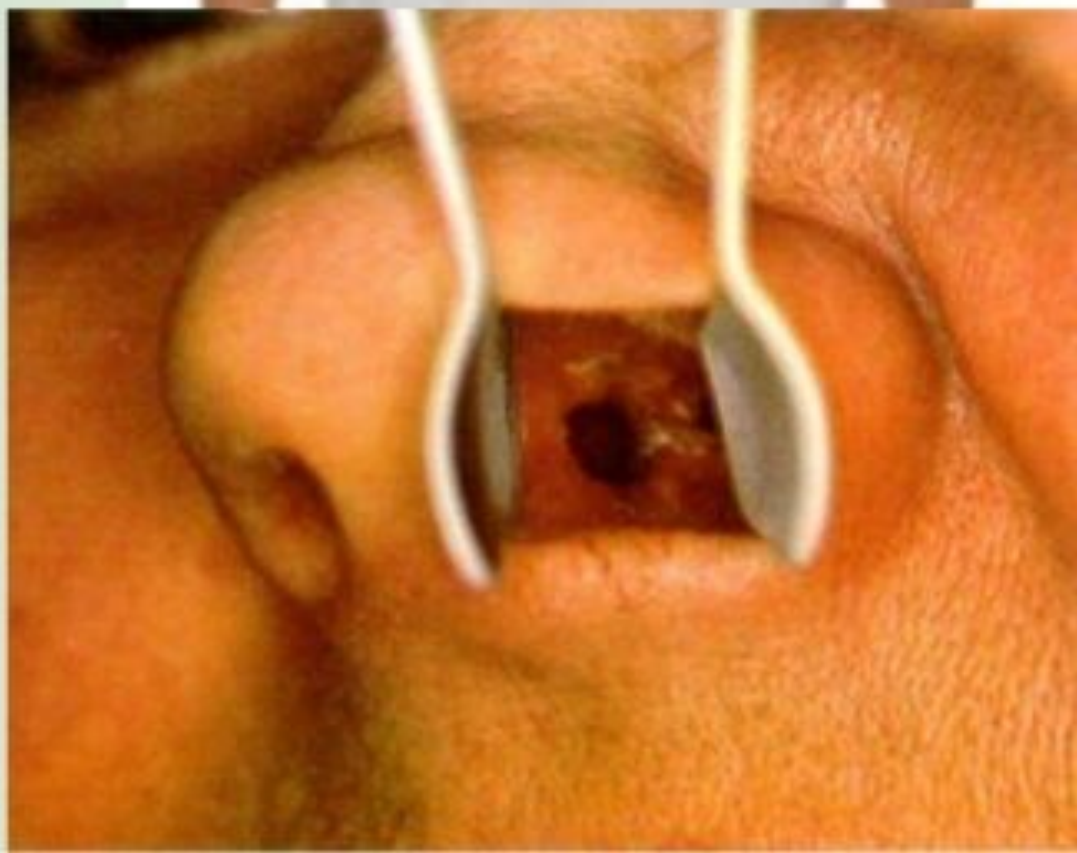
- slight bleeding, blood volume at which is not more than 70-100 ml;
- moderate, the amount of blood produced at which is 100-200 ml;
- massive, with a blood loss of more than 200 ml;
- profuse - portion bleeding of 200-300 ml or single, in which the patient loses more than 500 ml of blood. The condition requires immediate treatment!

Aetiology

- Classified as:
  - A) Local
  - B) Systemic and
  - C) Idiopathic

A) Local causes

1. Trauma- finger nail trauma, injuries of the nose, fractures of the middle third of the face and base of skull, hard blowing and violent sneezing.



Local causes

2. Infections and allergies
   - Acute: viral rhinitis, nasal diphtheria, acute sinusitis.
   - Chronic: all crust forming diseases, atrophic rhinitis, rhinitis sicca, tuberculosis, syphilis septal perforation, granulomatous lession of the nose, e.g. rhinosporidosis

Local causes...

3. Foreign body
   - Non-living: any neglected foreign body, rhinolith
   - Living: maggots, leeches
4. Neoplasm of the nose and paranasal sinuses
   - Benign: haemangioma and papilloma
   - Malignant: carcinoma or sarcoma
5. Atmospheric changes: high altitudes, sudden decompression (Caisson's disease)
6. Deviated nasal septum

Local causes...

Nasopharynx

1. Adenoiditis
2. Juvenile angiofibroma
3. Malignant tumours


Carcinoma of the nasopharynx

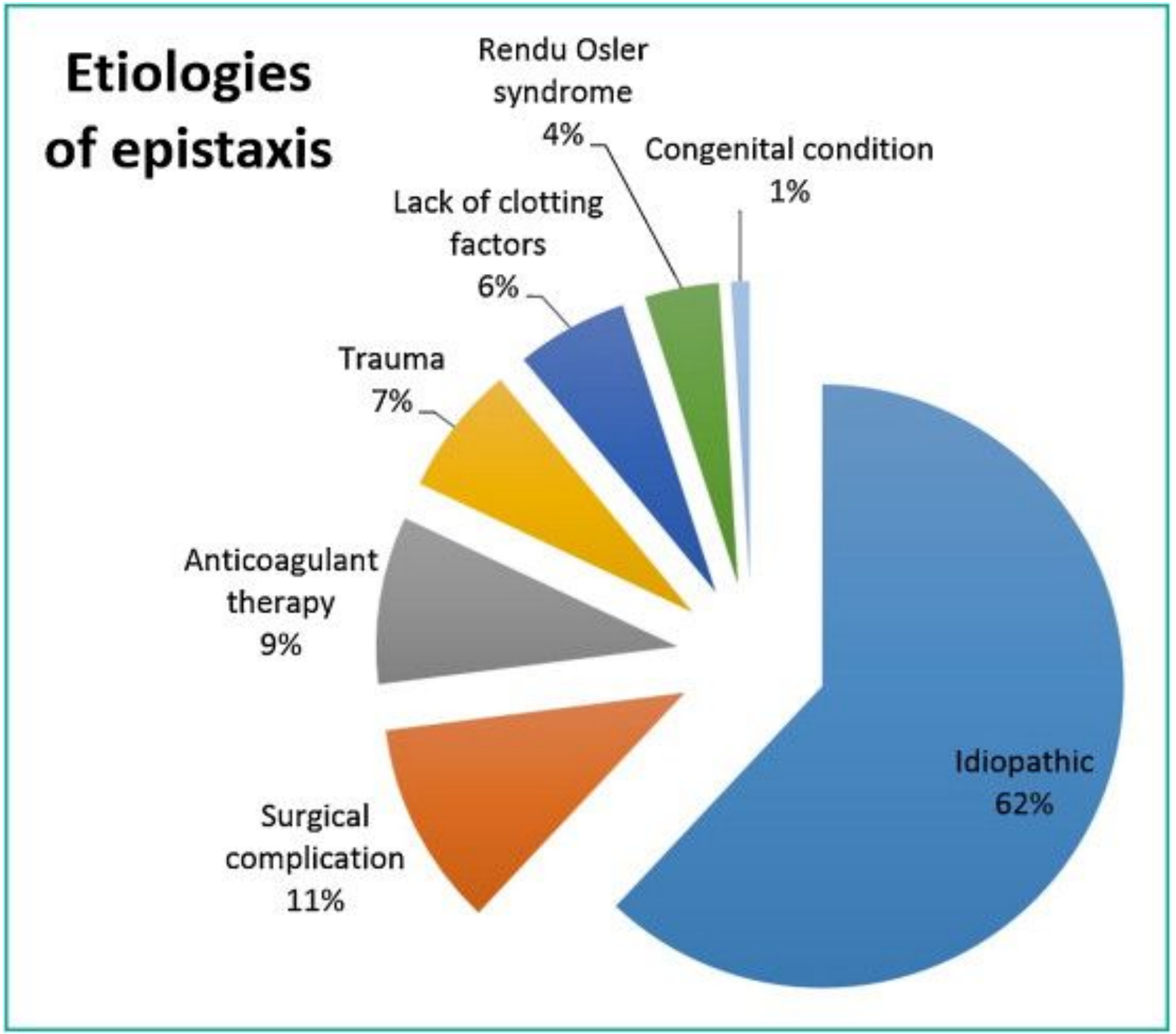

angiofibroma

B) Most common systemic causes

- Systemic arterial hypertension
- Endocrine Causes: pregnancy, pheochromocytoma
- Hereditary hemorrhagic telangectasias
- Osler Rendu Weber Syndrome
- Anticoagulants (ASA, NSAIDS)
- Hepatic disease
- Blood diseases and coagulopathies such as Thrombocytopenia, ITP, Leukemia, Hemophilia
- Platelet dysfunction

C) Idiopathic

- Many times the cause of epistaxis is not clear.


Etiologies of epistaxis
Rendu Osler syndrome 4%
Congenital condition 1%
Lack of clotting factors 6%
Trauma 7%
Anticoagulant therapy 9%
Surgical complication 11%
Idiopathic 62%

Pathogenesis

- The pathogenesis of epistaxis is quite various:

1. Local causes;
   - local traumas (usually a blunt trauma, e.g. a punch, possibly accompanied by a nasal fracture)
   - exposition to environmental irritants → severe local inflammatory reaction → some local changes, such as vasodilatation, increased permeability, increased blood flow and increased blood pressure → an increased risk of capillary ruptures
   - frequent use of nasal sprays, in particular corticosteroid nasal sprays reduce inflammation, but they enhance protein catabolism → an increased capillary fragility

Pathogenesis cont....

2. Systemic causes;

- Hypertension → increased risk of capillary ruptures
- vitamin C deficiency (required for the synthesis of collagen, an important component of connective tissue) → defective connective tissue → fragile capillaries, resulting in abnormal bleeding
- heart failure (particularly, right-sided failure) → an increase in systemic venous pressure and also in systemic capillary pressure → raises the risk of capillary ruptures

Cont....

- Hyperthermia → an extreme peripheral vasodilatation (in order to increase heat dissipation)→ raised risk of capillary ruptures
- alcohol → inhibits the vasomotor centre → a persistent peripheral vasodilatation in case of chronic abuse → an increased risk of capillary ruptures
- Impaired system of coagulation → decreased ability to stop bleeding when a blood vessel is broken.

Clinical presentation

- Bleeding from the nose (continuous or intermittent)
- Haemoptysis
- Haematemesis
- Anxiety
- Shock in severe cases

Complications

- Severe bleeding
- Hypoxia
- Sinusitis
- Otitis media
- Necrosis of the colemulla or nasal ala
- Haemorrhagic anaemia
- Possibility of airway obstruction
- Shock
- Septal hematoma or abscess
- Septal perforation

Diagnosis

- Laboratory investigations are not usually necessary, although they may be required in certain specific circumstances:
  - Haematocrit or FBC is obtained if there is concern about anaemia from excessive blood loss or clotting abnormality
  - Coagulation studies (PT, activated partial thromboplastin time, platelet function tests) are only required in the presence of atypical persistence, recurrence, or recalcitrance to treatment
  - Urea, serum creatinine, and LFTs are usually only performed if there is concern about the patient's general medical condition. Impaired liver function may result in impaired clotting.

Cont...

- Imaging is also not normally necessary but is indicated, following control of bleeding, in specific circumstances:
  - If a tumour is suspected, MRI of the head is obtained, it has the ability to differentiate between soft tissue of neoplasm versus fluid (e.g., blood or mucus)
  - CT scan of the paranasal sinuses is the imaging modality of choice when epistaxis is secondary to facial trauma, but it is often unable to differentiate sinusitis from neoplasm

Cont....

- Further specialist investigations for acute epistaxis
  - Nasal endoscopy and nasopharyngoscopy are indicated when an obvious epistaxis is not seen.
  - They also provide the opportunity for therapeutic intervention in the form of endonasal cautery or laser ablation.

Differential diagnosis:

- Disseminated intravascular coagulation;
- Hemophilia;
- Von Willebrand disease;
- Toxicity (aspirin, warfarin, cocaine, coumarine poisoning);
- Nasal foreign body;
- Allergic rhinitis.

The Do and Don'ts for First Aid Treatment

DIAGNOSIS	✗	✓
Nosebleed 	• Do not lean back. • Leaning back can be harmful as the blood could block the windpipe, blocking the airway.	• Sit in a comfortable upright position and lean forward slightly. • Then pinch your nose just below the bony nose bridge and above the fleshy lobes of the nostrils until the bleeding is stemmed. • Aftercare: Once the bleeding is controlled, do not blow your nose as this might dislodge the clot and make you bleed again.

Tilt your head forward slightly. Do not throw your head back, because you can swallow blood

Conclusion:

In conclusion, epistaxis or the common nosebleed may look frightening and may even cause a terrible mess, but most of the time it will end quickly if you sit down, breathe through your mouth, lean your head back, and pinch your nostrils. If you are still bleeding after 15 minutes or if a massive amount of blood flows, seek medical care immediately from your physician or an emergency room.

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