EPISTAXIS

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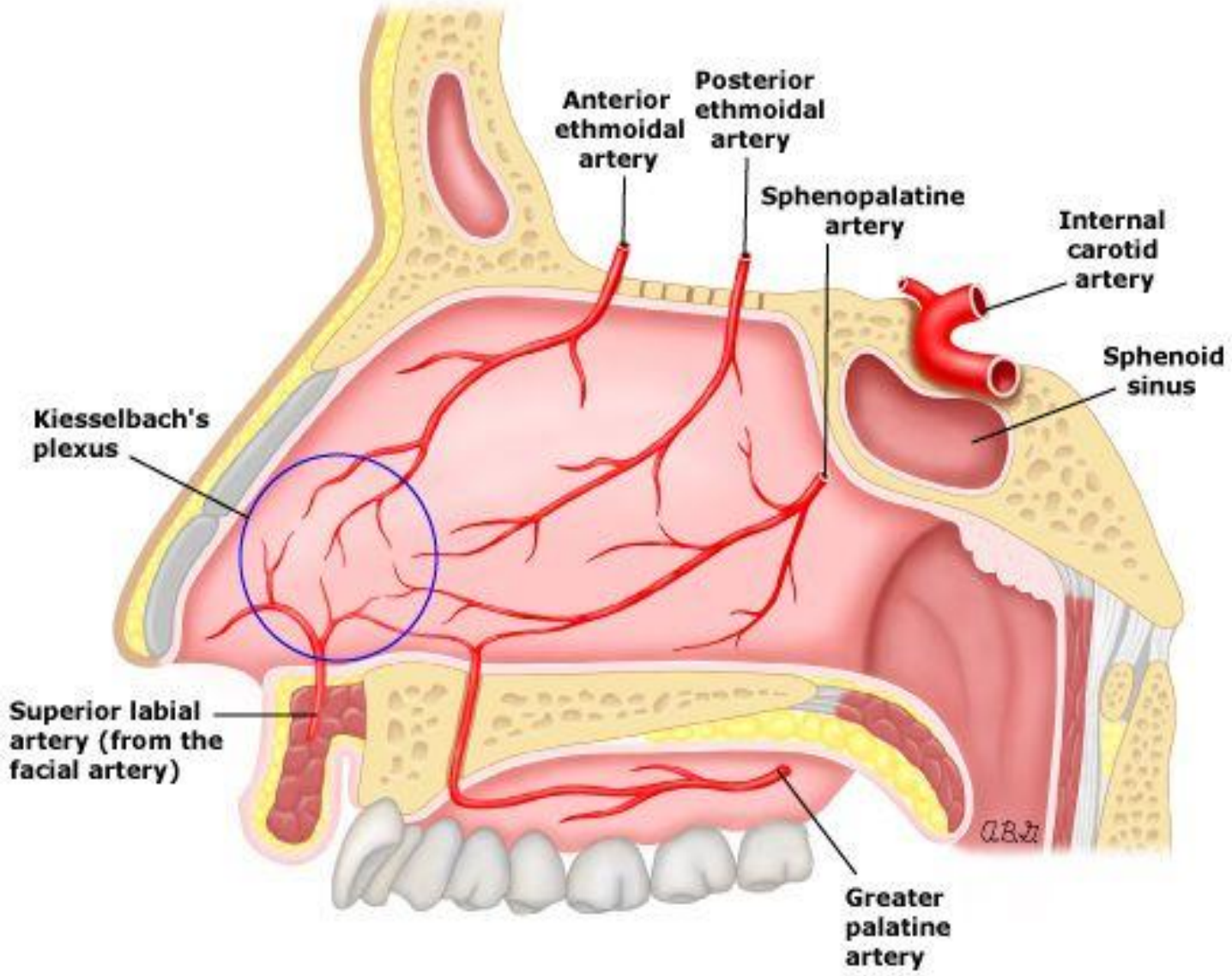
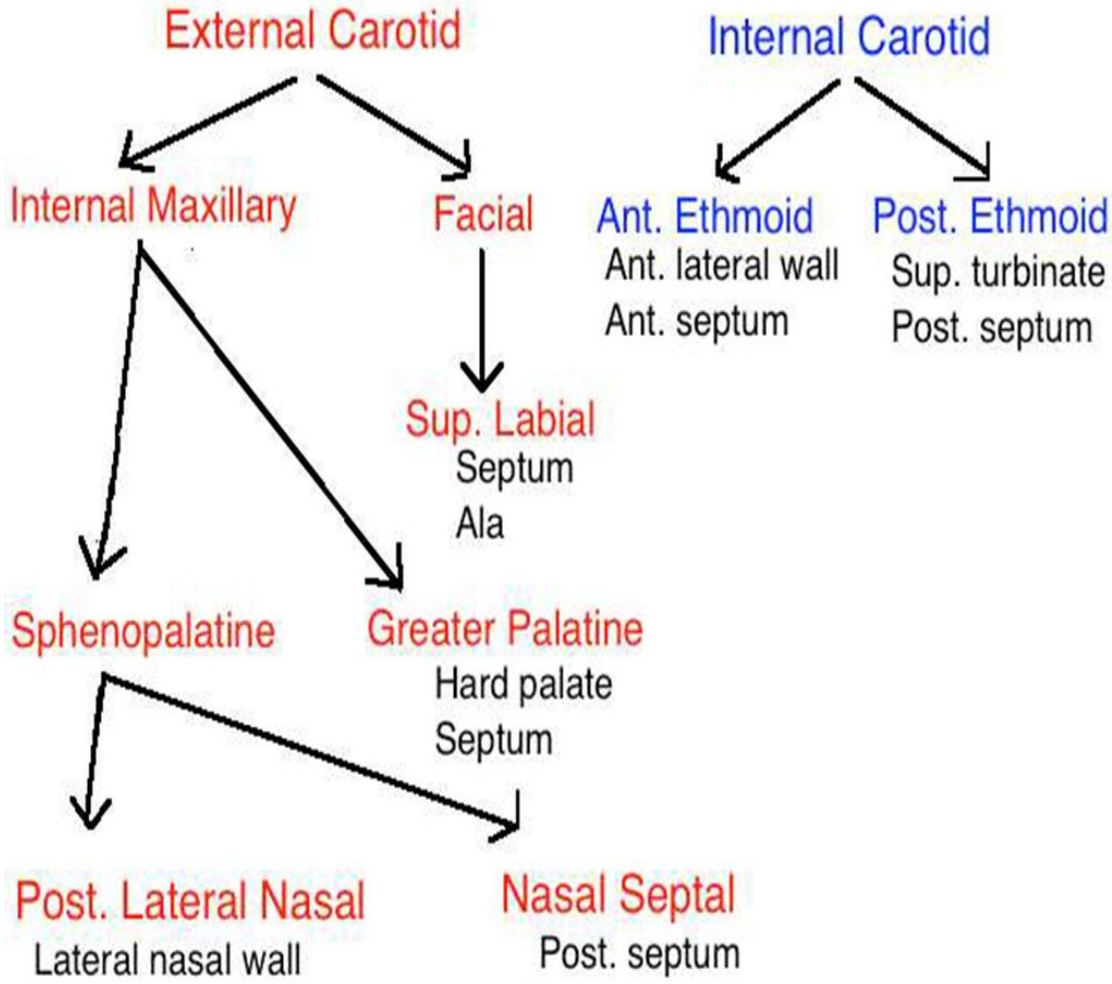
INTRODUCTION

- Presents in 7-14% of general population each year
- Estimated lifetime incidence 60%
- Most of the time, bleeding is self-limited, but can often be serious and life threatening.
- Epistaxis should never be treated as a harmless event.
- Bimodal incidence (2-10)& (60-80) years
- Males>females
- Winter.

VASCULAR ANATOMY





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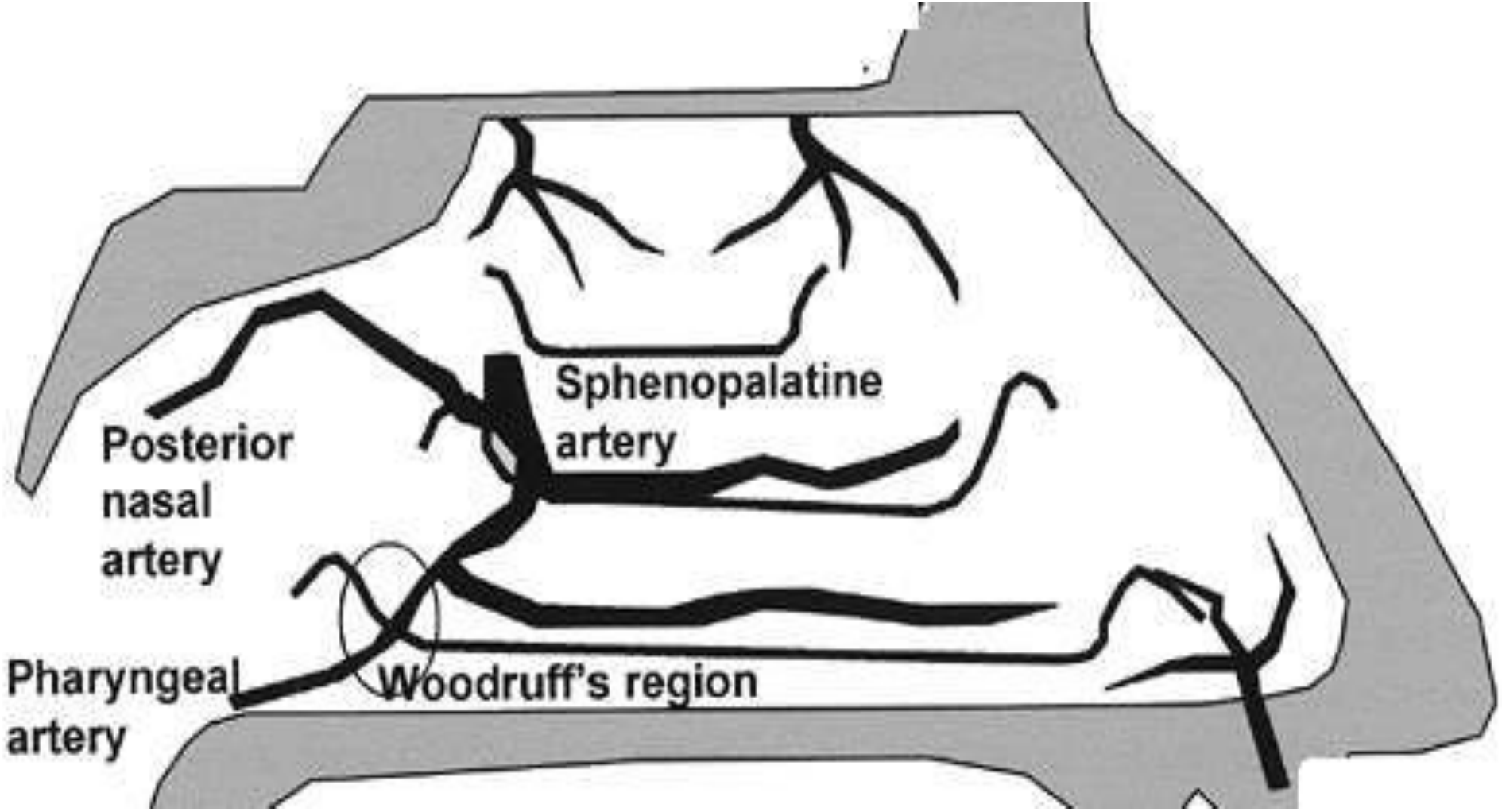
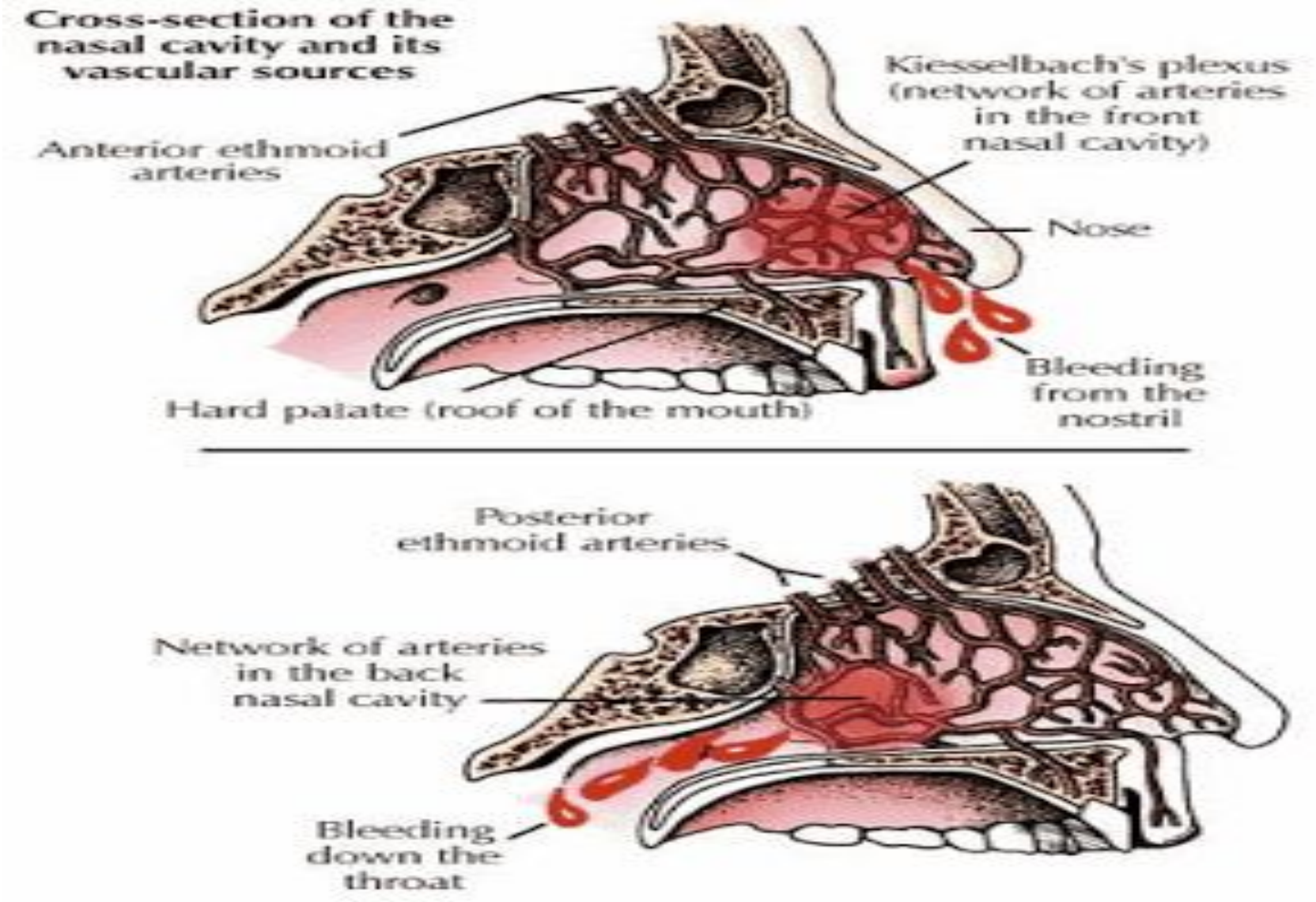


CLASSIFICATION OF EPISTAXIS



CLASSIFICATION OF EPISTAXIS

Anterior epistaxis	Posterior epistaxis
More common	Less common
Young patient	Older age
Little's area	Woodruff's area
Due to mucosal dryness	Due to HTN
Less significant	More significant

ETIOLOGY

LOCAL FACTORS

1. Traumatic (fractures, foreign body, nose picking).
2. Inflammatory (rhinitis, sinusitis).
3. Environmental (high altitude, air conditioning).
4. Iatrogenic
5. Deviated nasal septum
6. Chemical irritants

ETIOLOGY

7. Neoplastic (tumors of the nose, sinuses and nasopharynx).

8. Juvenile nasopharyngeal angiofibroma

9. Inverted papilloma

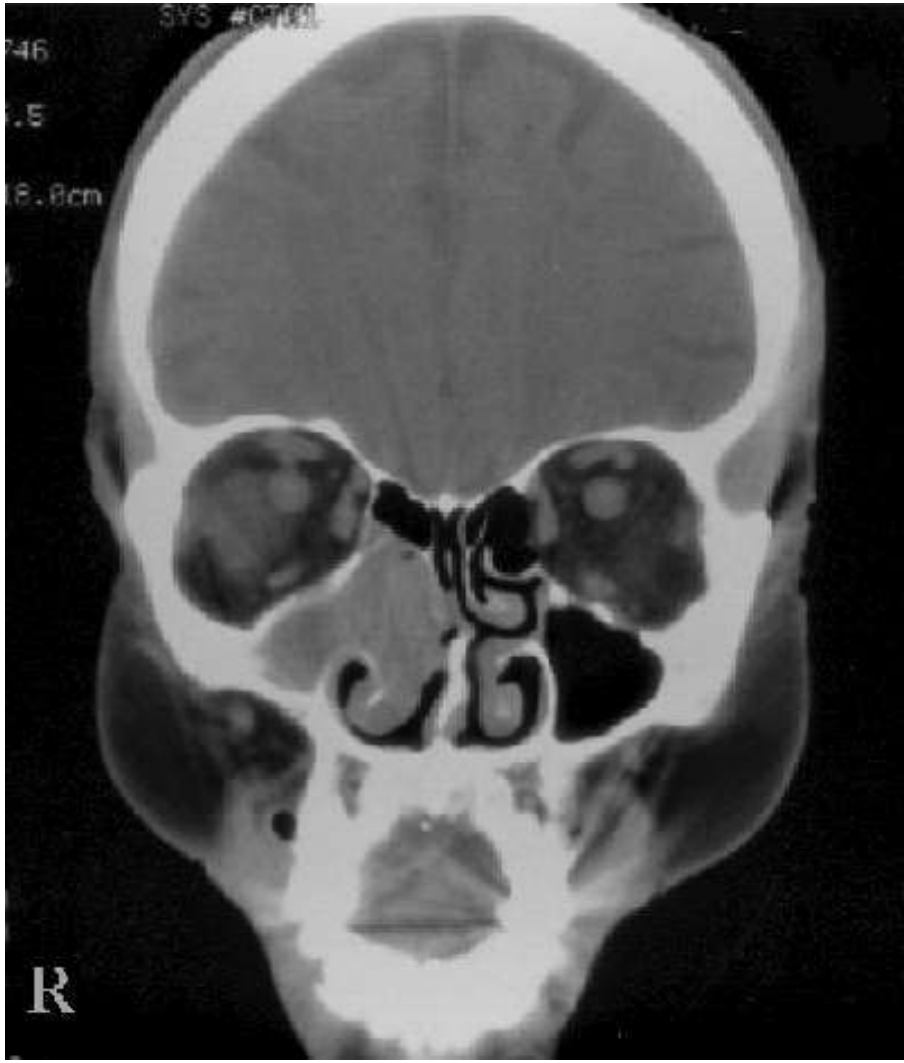
10. SCCA

11. Adenocarcinoma

12. Melanoma

13. Esthesioneuroblastoma

14. Lymphoma



ETIOLOGY

SYSTEMIC FACTORS

1. Coagulopathies (haemophilia, leukaemia).
2. Anticoagulant medications
3. Acetylsalicylic acid & NSAIDS
4. Vascular abnormalities
5. Renal \ liver failure
6. HTN

HTN as a cause of epistaxis

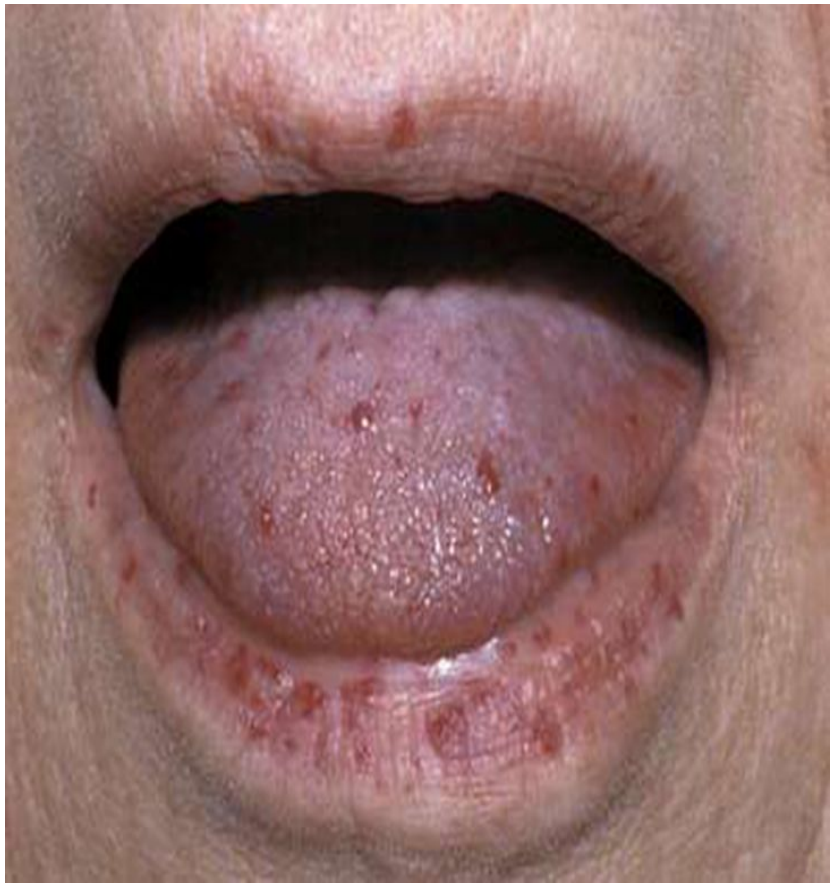
- although multiple studies exist that examine this relationship, no consensus has been achieved.

- The primary issue is that there are multiple confounding factors such as age and use of anticoagulation medication that may be the cause of epistaxis and not the hypertension itself.

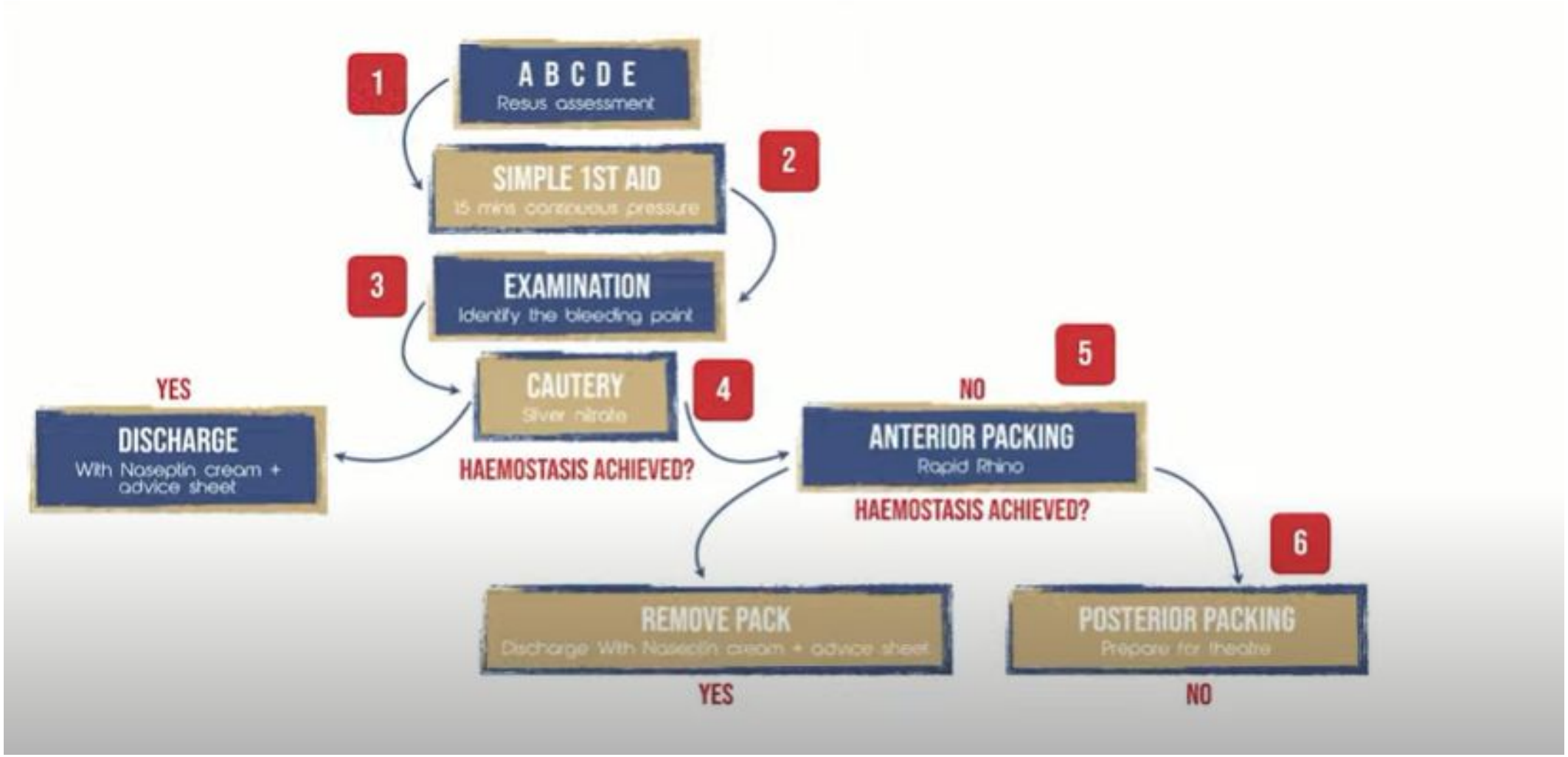
- Increased age induces fibrosis of the tunica media of the arteries, which may lead to inadequate vasoconstriction after rupture of a blood vessel.

Hereditary Hemorrhagic Telangiectasia (HHT)

- Osler-Weber- Rendu syndrome
- Autosomal dominant
- Widespread cutaneous, mucosal, and visceral telangiectasias (arteriovenous malformations) in the brain, lungs, liver, and gut
- Manifests in nose as raised lesions
- **Treated by : Septodermoplasty.**



Management


1
A B C D E
Resus assessment
SIMPLE 1ST AID
15 mins continuous pressure
2
3
EXAMINATION
Identify the bleeding point
CAUTERY
Silver nitrate
4
HAEMOSTASIS ACHIEVED?
YES
DISCHARGE
With Naseptin cream + advice sheet
NO
5
ANTERIOR PACKING
Rapid Rhino
HAEMOSTASIS ACHIEVED?
6
REMOVE PACK
Discharge With Naseptin cream + advice sheet
YES
POSTERIOR PACKING
Prepare for theatre
NO

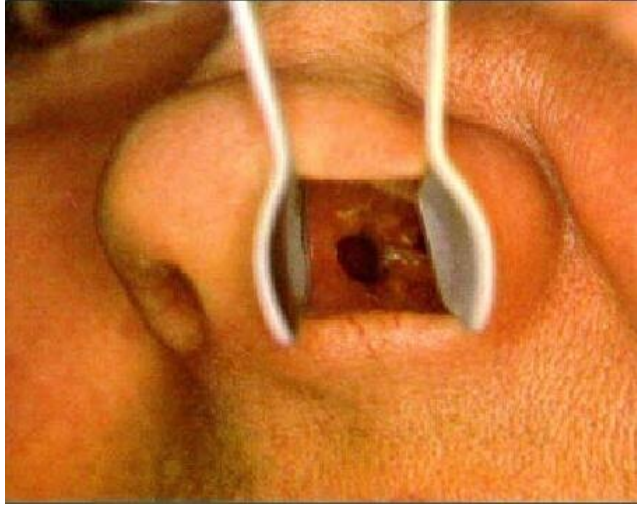
Management

Step 1 :

Initial Assessment Assess Airway, Breathing, Circulation (ABCs). Check vital signs, establish IV access if needed,

Step 2 : once the patient is stable , the property is to control bleeding by **compress** the soft , cartilaginous part of nose with head slightly down at least for 10-15 min

Management



- **Step 3 : . Topical Therapy**

Apply vasoconstrictors: (Oxymetazoline/Xylometazoline),

local anesthesia: (Lidocaine with Epinephrine),

and suction blood clots to visualize the bleeding site

HISTORY

Amount, duration , frequency

Nasal trauma, obstruction

HTN ,Bleeding disorder ,liver\kidney diseas

Anticoagulant , Antiplatelet drug

Other medical conditions - DM, CAD, etc.

Family history of bleeding

lab study

1.CBC

2.X-Match

3.Coagulation profile

4.KFT

5.LFT

Treatment

- Control of hypertension
- Correction of coagulopathies/thrombocytopenia
- FFP or whole blood/reversal of anticoagulant/platelets

Management

Step 4 : Cauterization

1- firstly , cotton ball soaked with 4% lidocaine placed into affecting nasal cavity , removed after 10 min

2- small wooden stick tipped with sliver nitrate is applied to area that cause nosebleed

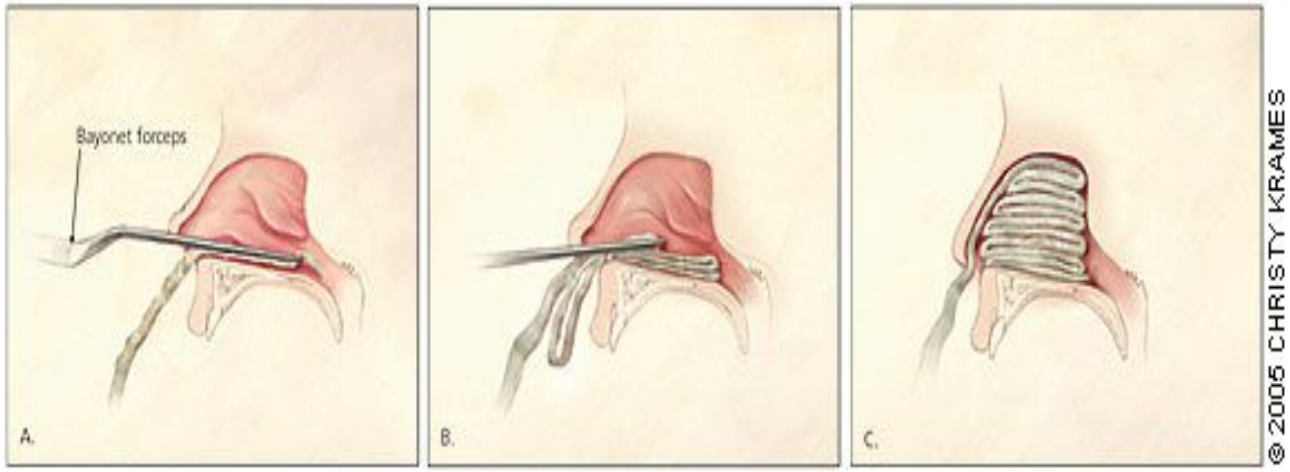
3- as the area heal , thicker scar tissue is formed which decrease risk for future nosebleed

During the healing process after nasal cauterization , after care should be perform to minimize mucosal irritation as well as help area heal as quickly as possible :

1- Avoid nose blowing for at least 1 week

2- Apply greasy antiseptic barrier ointment three times a day for 1-2 weeks

Management



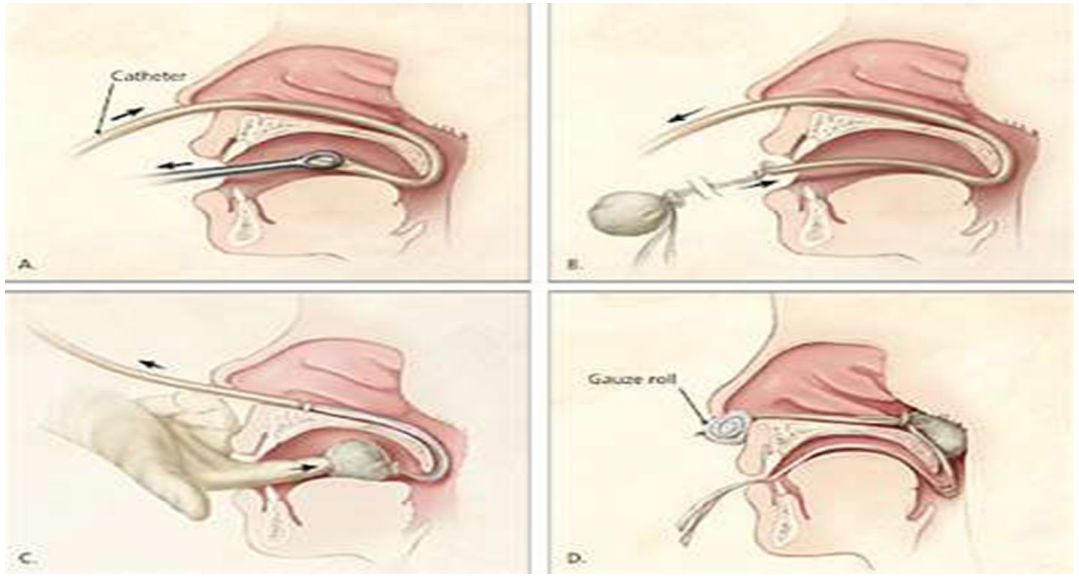
Step 5 : anterior nasal pack

1- done by using a forceps to insert nasal pack start with first layer in the floor and subsequent layer based on top of underlying layers

No need to admission to ICU , removed within 2-3 days

Should cover patient with topical and systematic antibiotic (as it most common cause of toxic shock syndrome)

Management



Step 6 : posterior nasal pack

1- Insert the catheter into the nostrils parallel to floor of nasal cavity

2-advance the catheter until the tip of it reach the post nasal space

3- inflate the balloon with 20-30 ml air

4- tape the posterior pack then do the same technique as for anterior packing

Need admission to ICU and monitor

Posterior pack admission :

- Elderly & those with chronic medical illness may need ICU admission.
- Continuous cardiorespiratory monitoring
- IVF
- Oxygen supplement maybe needed
- Analgesia \mild sedation
- Blood transfusion & FFP if needed

Complications of packing

Infection:
- **Toxic shock syndrome (TSS)**
- **Sinusitis**

Ischemic/ pressure related:
- **Septal perforation**
- **Mucosal pressure necrosis**
- **Alar necrosis**

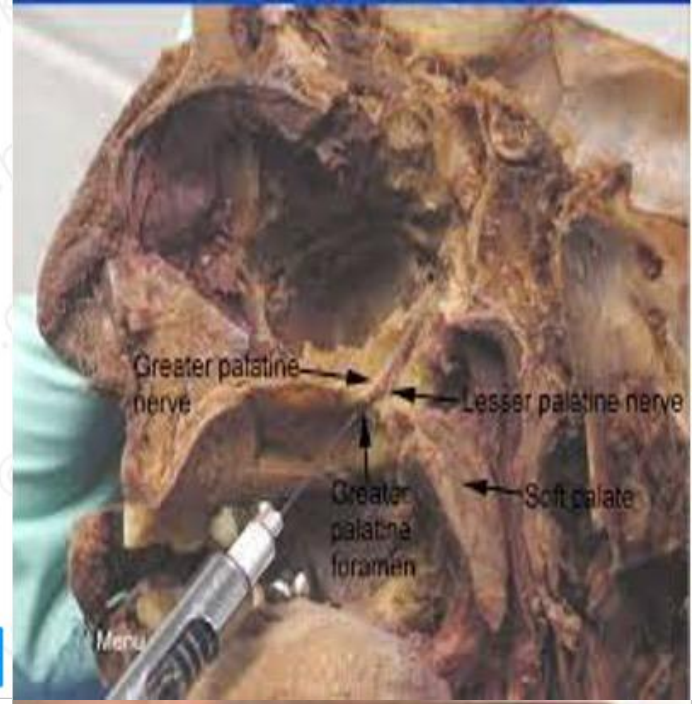
Mechanical:
- **Ballon migration**
- **Aspiration**

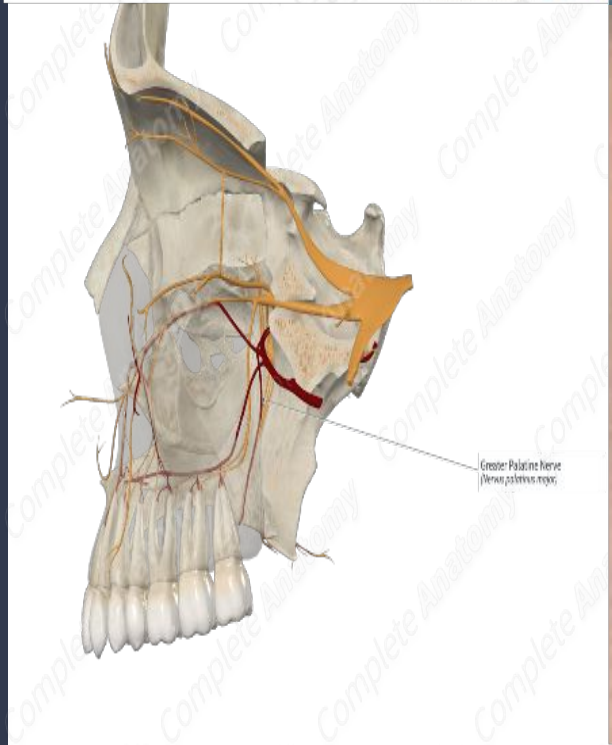
Systemic/ physiological :
- **Hypoxia**
- **Vasovagal attack**

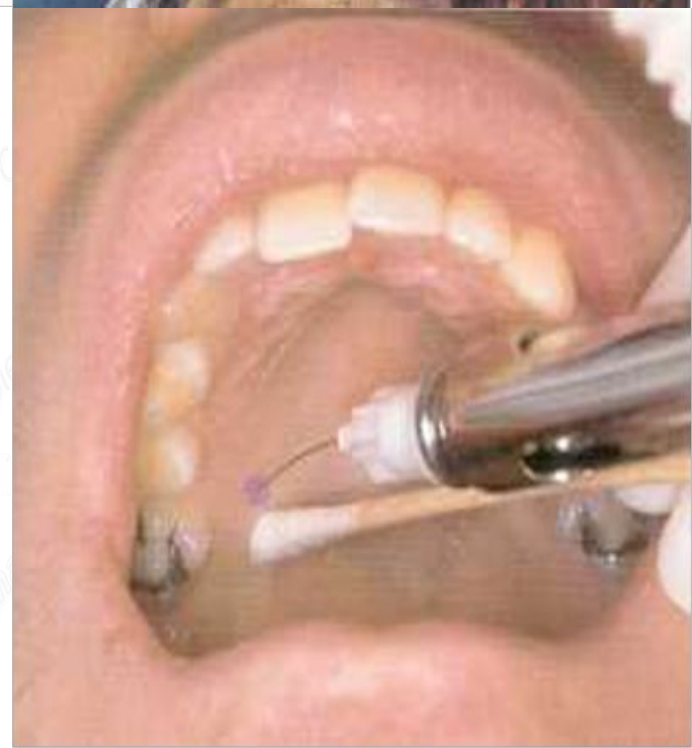
Greater palatine injection

Is done by passing a needle through the greater palatine foramen into the pterygopalatine fossa .

It’s particularly effective for posterior epistaxis,since the main source of bleeding is sphenopalatine artery





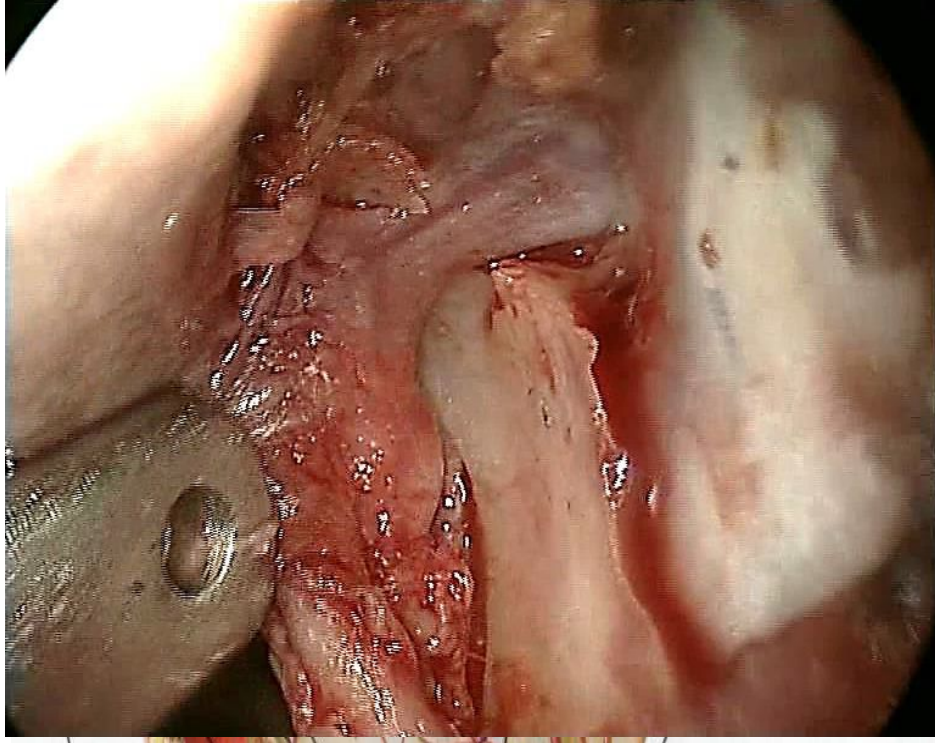


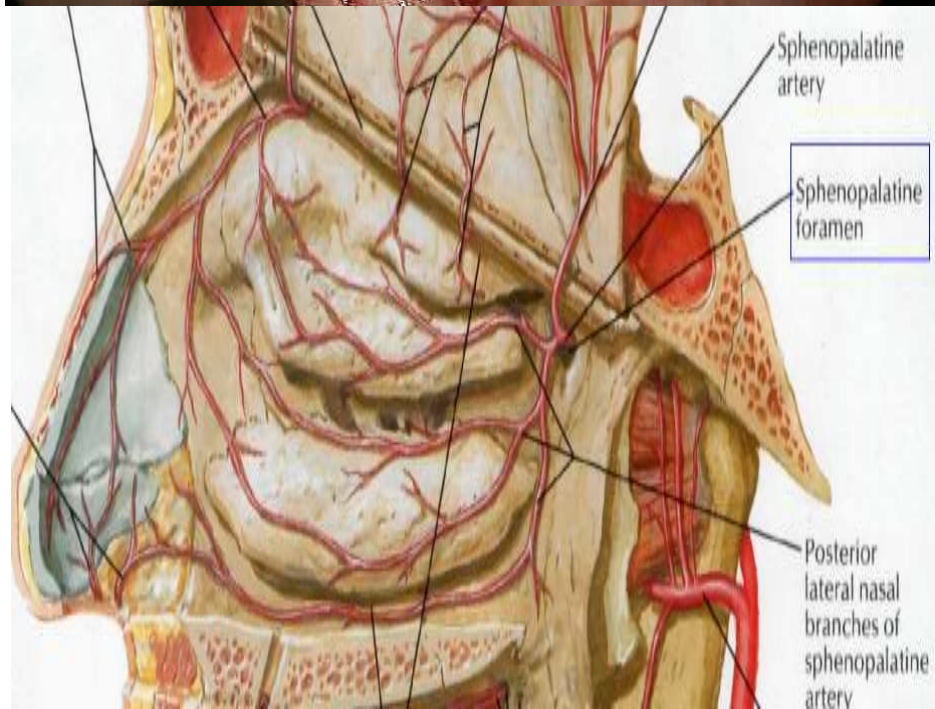
Surgical treatment

1. Endoscopic sphenopalatine artery (SPA) ligation
2. Anterior/posterior ethmoidal artery ligation
3. Transantral ligation of IMAX
4. Embolization of the IMAX

1-ligation OF SPHENOPALATINE ARTERY (SPA)

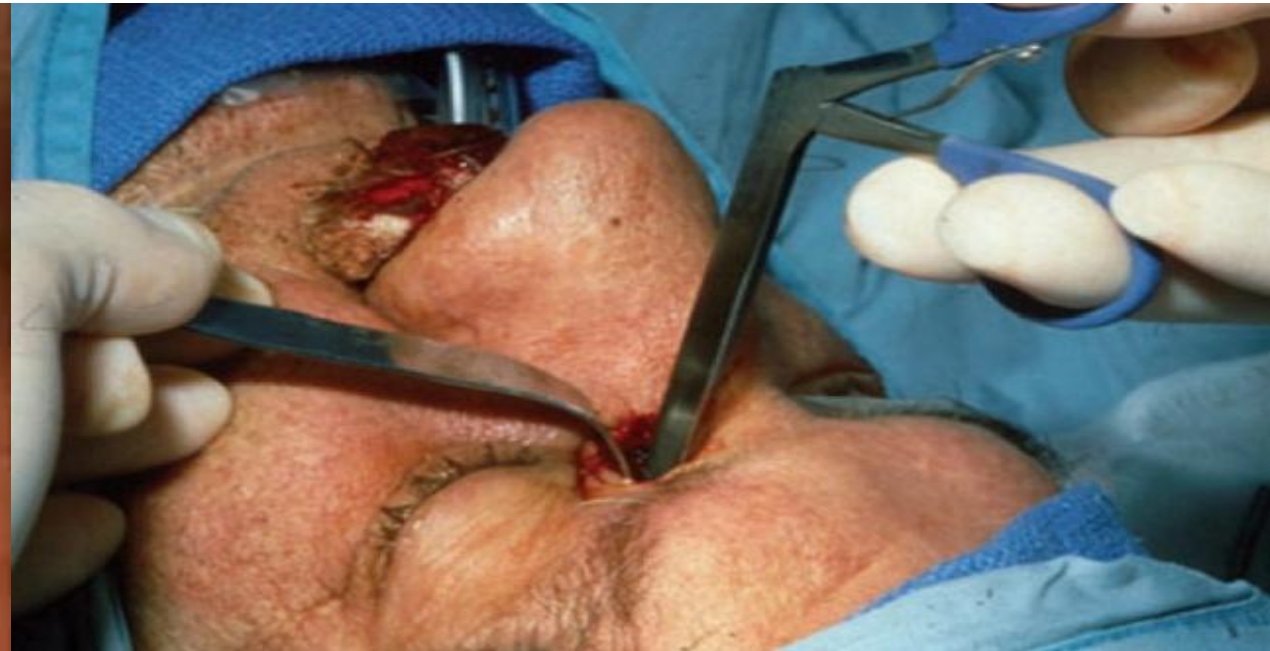
- Newer Method – Endoscopic
- Older method – Caldwell-Luc approach
- Allows direct cauterization of vessels and is highly effective as a second-line treatment
- Fast, not technically difficult , Low morbidity
- Good alternative to embolization
- Highly effective – 96-100%
- Complications are rare





2-ANTERIOR/POSTERIOR ETHMOIDAL ARTERY LIGATION

- Can be performed externally (Lynch incision) or endoscopically
- Anterior ethmoid artery is located 24mm from the anterior lacrimal crest,
- posterior ethmoid artery is 36mm from anterior lacrimal crest
- Complications of procedure include :stroke, blindness, ophthalmoplegia, and epiphora



3-TRANSANTRAL LIGATION OF IMAX

Performed through the Caldwell–Luc approach, where the maxillary sinus is opened to expose the pterygopalatine fossa. The tortuous internal maxillary artery (IMAX) is identified and ligated.

This is an older method, largely replaced by SPA ligation due to its high morbidity

- **High failure rate 11%-20%**
- **High complication rate 14%-20% :**

1. **Facial paresthesia**
2. **facial pain**
3. **dental pain and numbness**
4. **hematoma**
5. **ophthalmoplegia**
6. **blindness**

4-EMBOLIZATION OF IMAX

An interventional radiologist uses a catheter (via femoral artery) to deliver embolic material into the IMAX, occluding blood flow. Useful if surgery fails or patient is unfit for anesthesia.

- **Alternative to SPA ligation for posterior epistaxis**
- **Suitable for poor surgical candidates**
- **Backup when surgical ligation fails**
- **Requires highly skilled interventional radiologist**
- **High complication risk: stroke, facial pain, numbness**
- **Higher failure rate vs. surgical ligation**
- **Less cost-effective**