

Epistaxis:



Bleeding from the nose

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Objectives:

1. Blood supply of the nose.
2. Etiology of epistaxis.
3. Clinical features of epistaxis
4. Types epistaxis.
5. Management of epistaxis.

Arterial blood supply of the nose.

I. Internal carotid artery.

1. Anterior ethmoidal a.
2. Posterior ethmoidal a

branches from ophthalmic artery.

Supplies nasal cavity above the

Level of middle turbinate.and

* ethmoidal and frontal sinuses.

II. External carotid artery.

1. Sphenopalatine a. 2. Greater palatine a.

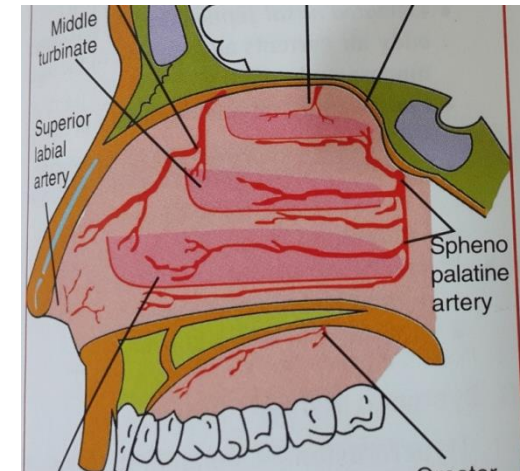
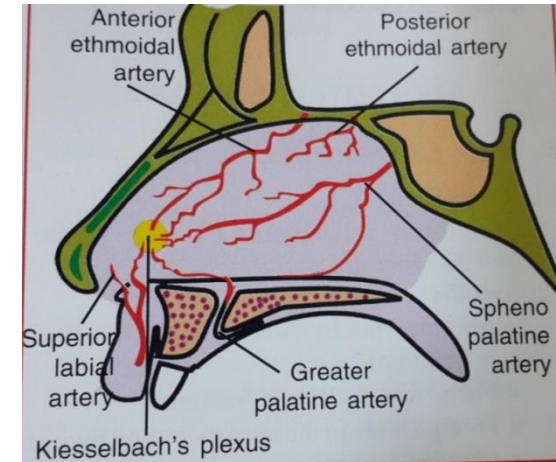
both are branches of internal maxillary a.

3. Superior labial a. branch of facial a.

*These supplies the lower part of nasal cavity

(about 90% of the nose),**Maxillary and sphenoid sinuses.

****The veins of the nose tend to follow the arteries. They drain into the pterygoid venous plexus, facial vein or cavernous sinus.**



Etiology of epistaxis

I. Idiopathic : Spontaneous bleeding without any proved causes.

*The common cause 70-80%.

*Common in children and adolescents.

II. Local causes :

1. Traumatic. *Nose picking. *Blow to the nose. *Foreign body in the nose.

* Fracture nasal bones and anterior skull base, and fracture sinuses.

*Iatrogenic: Turbinectomy, Endoscopic sinus surgery.

2. Inflammatory. Rhinitis and sinusitis ,either acute or chronic, specific(diphtheria, TB)
or non-specific infection. Wegner's granuloma

3. Neoplastic: Benign or malignant tumor in the

*Nasal . Like haemangioma of the septum.

*Sinuses. Like angioma of sinus, squamous cell ca.

*Nasopharynx. Angiofibroma, squamous cell ca.

4. Septal causes. Deviation, perforation. ,septal haematoma .

5. Environmental. * Over exposure to air condition, heat, smoke, and Industrial fumes results in dryness and crustation.

**Dry and cold air during the autumn and winter months makes epistaxis more common in these seasons

III. Systemic causes:

1. Raised blood pressure. Temporary or permanent.

A. Raised arterial pressure. Hypertension common in adult and elderly..

B. Raised venous pressure. like congestive heart failure, emphysema.
whooping cough, pneumonia, associated with venous bleeding.

2. Blood dyscreasia and diseases of blood vessels. Like
Leukemia , Haemophilia , Von wilbrand disease , Osler's
disease,(Hereditary hemorrhagic telangiectasia),purpura.etc .

3.Hepatic failure.(hypoprothrombinemia)

4.Renal failure.(Platelet dysfunction)

5.Drugs taken.

*Anticoagulants (heparin , warfarin).

*Antiplatelet aggregation like aspirin and NSAID.

Site of bleeding :

1. Little's area (Kiesselbach's plexus).

The commonest site of bleeding (90%), located in the antero-inferior part of the nasal septum, when anastomosis of poorly supported blood vessels are;

1. Anterior ethmoidal a.
2. long sphenopalatine a.
3. greater palatine a.
4. Superior labial a.

2. Woodruff's area. Venous plexus in the posterior end of inferior turbinate.

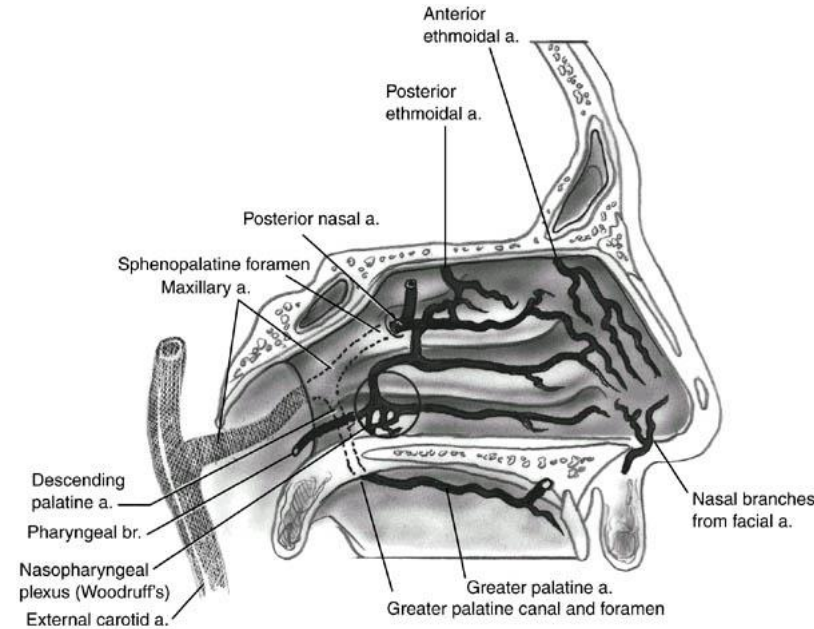
3. Retrocolumellar vein.

lies immediately behind the columella is a common cause of venous epistaxis in children.

4. Above middle turbinate

from anterior and posterior ethmoidal arteries, usually in case of hypertension.

5. From middle meatus (rare) from maxillary and ethmoidal sinuses.



Clinical feature of epistaxis

Epistaxis is a common ENT emergency.

Bleeding varies in degree from trivial to lethal.

- * Usually occur from anterior nares.

May flow back in to the pharynx and in the opposite nostril.

Occasionally inhaled and may be suspected **haemoptysis**.

Or swallowed and get **haematemesis, malaena** in severe bleeding

- * **In severe epistaxis hypovolemic shock occurs :**
Pallor, Weak rapid pulse , hypotension, cold extremities, irritability, decreased urine output.

- * **Anemia** in recurrent severe bleeding.

Types epistaxis

Type of epistaxis	Anterior epistaxis	Posterior epistaxis
Incidence	More Common (90%)	Less common (10%)
Age	Younger patients <18 years	Older patients >40 years
Site	Common site is little's area	*Common site is woodruff's area
Common Cause	Idiopathic	Hypertension
Localization	Easy	Difficult
Management	Easy to manage	More troublesome and serious
Treatment.	Cautery,if fail anterior nasal packing,merocel,nasal balloon.	(Endoscopic diathermy),if fail posterior nasal pack, nasal balloon(with anterior and posterior components)

Management of epistaxis:

In acute active epistaxis priority is given to *control bleeding and** deal with hypovolemia and blood loss.

*in sever bleeding insert I.V line, take blood sample for blood group and Rh, Hb%, give fluid, do cross matching and blood transfusion when needed.

*Air way secured

I. Brief history. Looking for **Severity.** amount of blood loss and predisposing factors.

***Duration.**(short in venous bleeding, prolonged in arterial bleeding).

***Frequency.** Recurrent in angiofibroma , osler's disease,

***Trauma** (Facial trauma, nasal surgery)

***Medical history.** hypertension.

***Drug history.** aspirin, warfaren.

***Family history.** Haemophilia , Vonwelbrand disease.

***Nasal symptoms.** Obstruction, rhinorrhea.

II. Examination:

***General assessment, Vital sign(PR,RR,B.P,Temp.,Level of consciousness.)**

***Inspection ,Pallor,Osler,s disease,purpura, uremia, jundice,..**

***Hypertension**

***Fever.**

2. Local examination to identify the bleeding site.

*** Anterior rhinoscope.**

***Posterior rhinoscope.**

***Endoscopic examination.**

III. Arrest bleeding.

1.First aid measures.

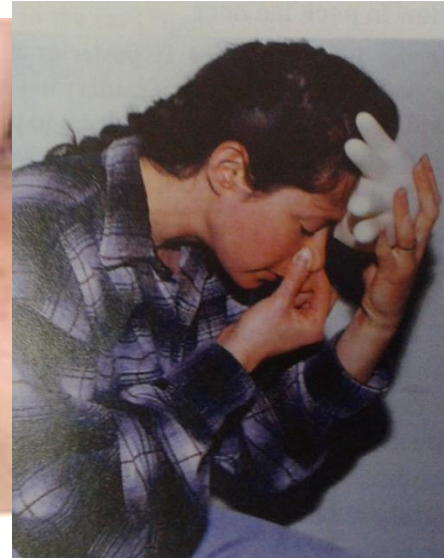
- ***Pressure**:Pinching the ala nasi to compress the vessels of anterior part of the septum which common site of epistaxis by thumb and index finger for 5-10 minutes.
- ***Position**:Lean forward slightly with the flexion of the head tilted to prevent blood get to post nasal space, and breathing quietly through the mouth.
- ***Ice or cold packing** to the bridge of the nose causes reflex vasoconstriction.
- ***Local vasoconstriction** (Pseudo ephedrine. Oxymetazoline drops.)
- *In Hypo volemic shock. Insert I.V line, take blood sample for blood group and Rh,Hb%, give fluid, do cross matching and blood transfusion.



Incorrect



Correct



II. Cauterization. when identify the bleeder site.

*Using of local decongestant and local anesthesia ;;Either

1. Chemical cautery using caustic agents (silver nitrate sticks, Trichloroacetic acid).

2. Electrical cautery. (Galanic cautery, Bipolar diathermy.)

3. Endoscopic guidance using hot wire cautery, or modern single fiber bipolar electrodes ,for posterior bleeding.

Post cautery give lubricants ,antibiotics, and sedation.

Avoid bilateral septal cautery results in septal perforation

Post cautery instructions:

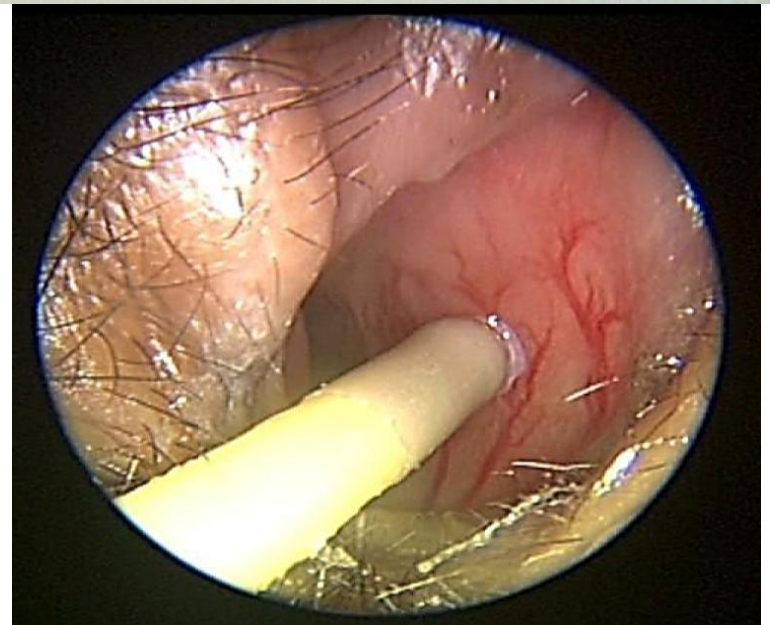
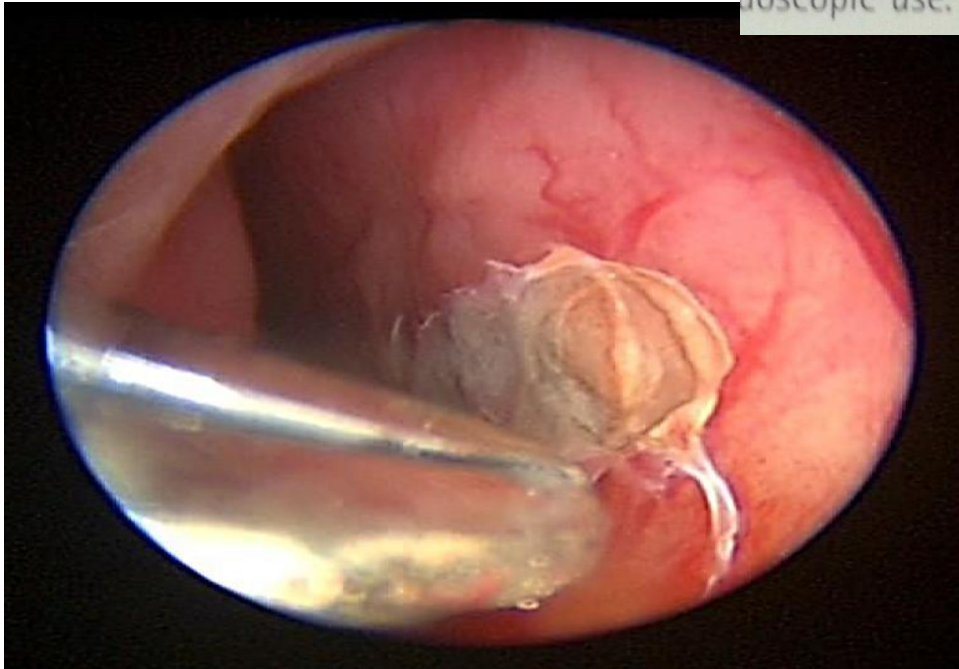
- *No manipulation.
- *No nose blowing.
- *Open mouth when sneezing.
- *No straining, lifting or strenuous activity for one week.
- *No smoking or alcohol for one week.
- *No hot drink or food for one week.
- *Elevate the head of the bed for one week.
- *No aspirin, warfarin, or similar drugs for one week.
- *Cold mist humidifier at the bed time.
- *lubricant drops (normal saline) for one week.



Little's area



Figure 126.5 Modern single fibre bipolar diathermy probe for endoscopic use.



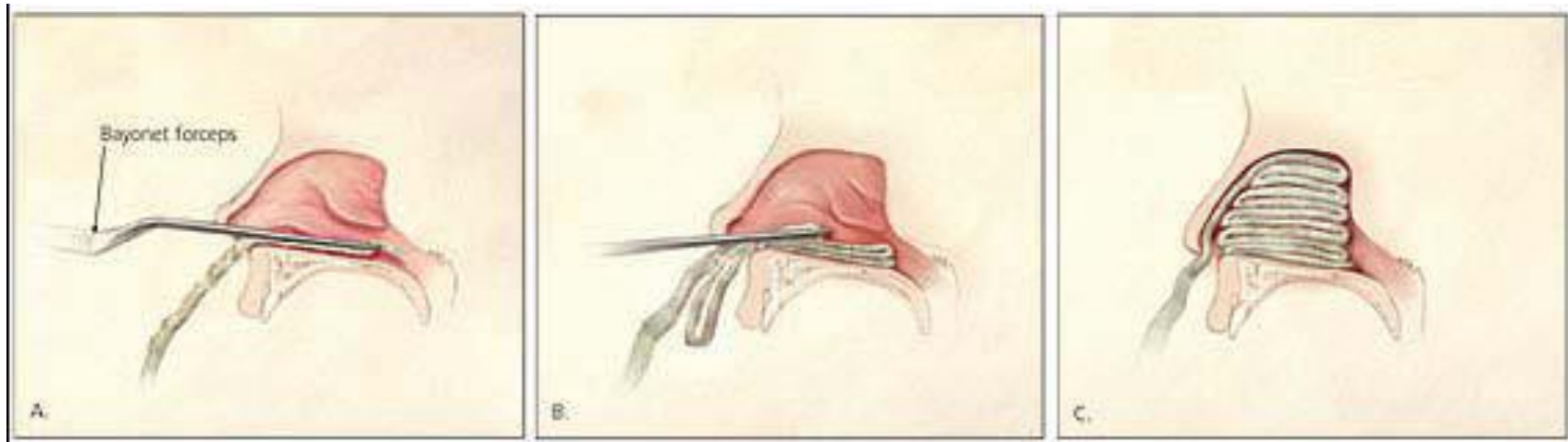
Silver nitrate stick

III.Nasal packing:

When fail of medical treatment , cauterization or not see the bleeder site.

1.Anterior nasal packing:

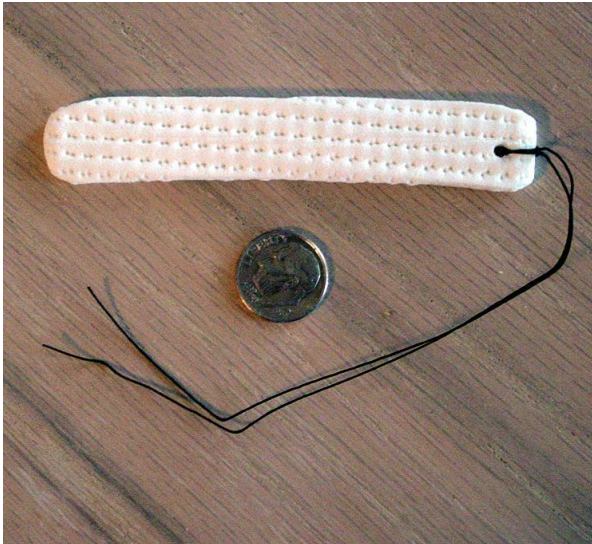
Using ribbon gauze(half inch)lubricated with petroleum gelly or Bismuth Iodoform Paraffin Past(BIPP).done under local anesthesia ,done in layers without traumatizing the nasal mucosa using Tilly's forceps, inserted along the floor of the nose then build mup in successive loop from floor upward till every part of nasal cavity finally fitted. **Usually done bilaterally to increase pressure on nasal septum.**



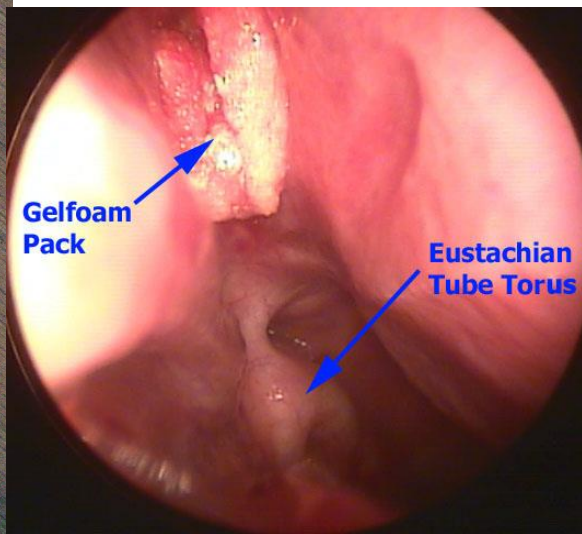
Pack usually left for 24-72 hours depend on patient's condition,
With antibiotic cover.

if bleeding restart needs further evaluation and reinserted or do
posterior packing

- **Complications**; sinusitis, septal perforation, hypoxia.
****Modern variations**. using special tampons, Merocel , Gelfoam,
and nasal balloon
- ***Merocel** ;is compressed dehydrated sponge, which can inserted
in the nasal cavity then rehydrated by blood, expanding to 3
times it is normal size filling nasal cavity.



Merocel nasal packing(Tampon)



- Nasal balloon,for anterior epistaxis (from little's area).

2. Posterior nasal packing: When failure of anterior nasal packing, or bleeding arise from back(ex. sphenopalatine a. in postnasal space)

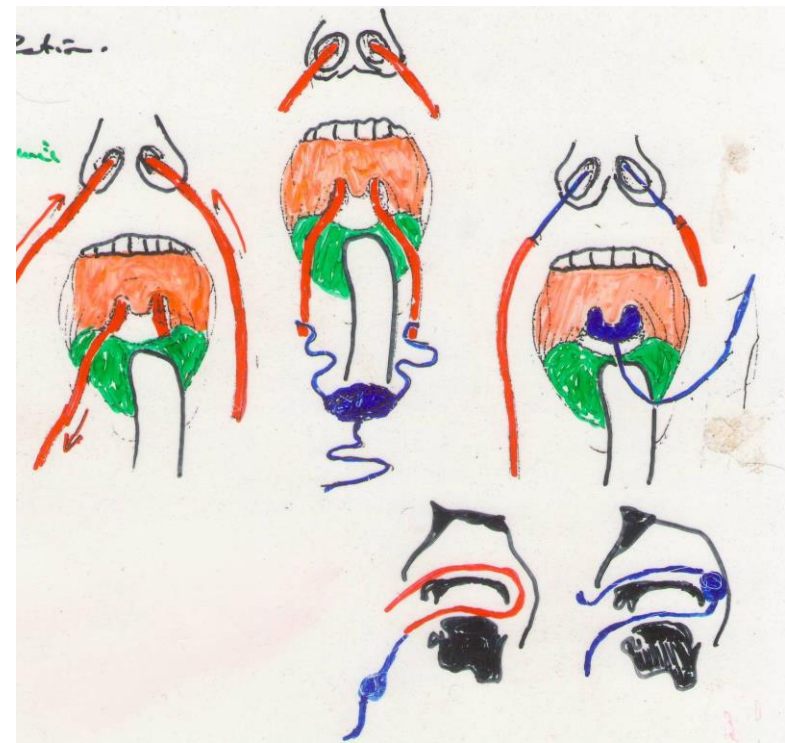
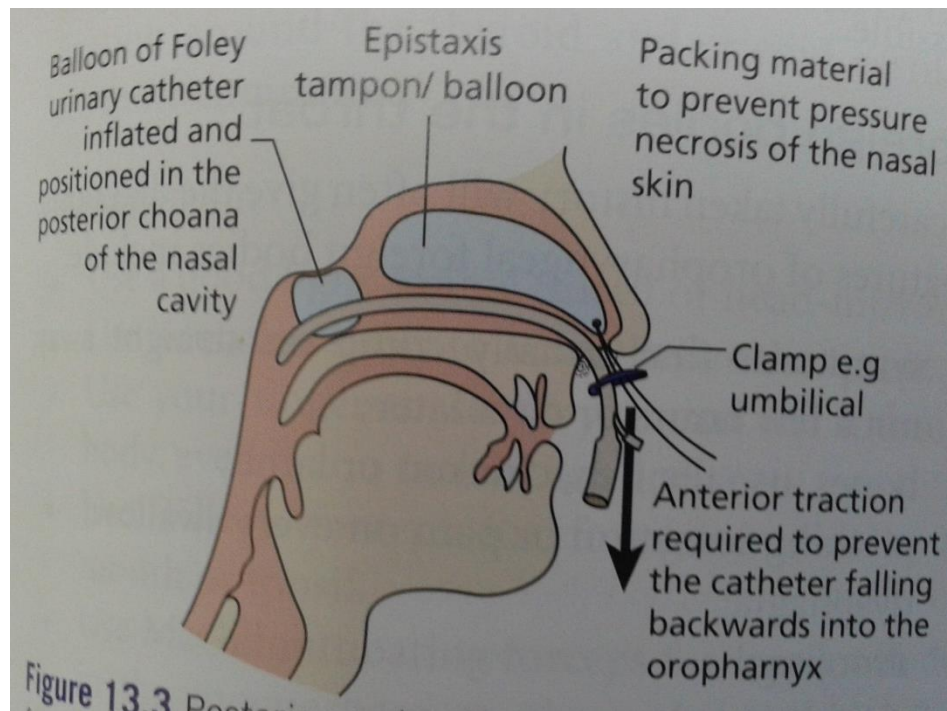
*Can be carried under local anesthesia, but general anesthesia is preferable. Using

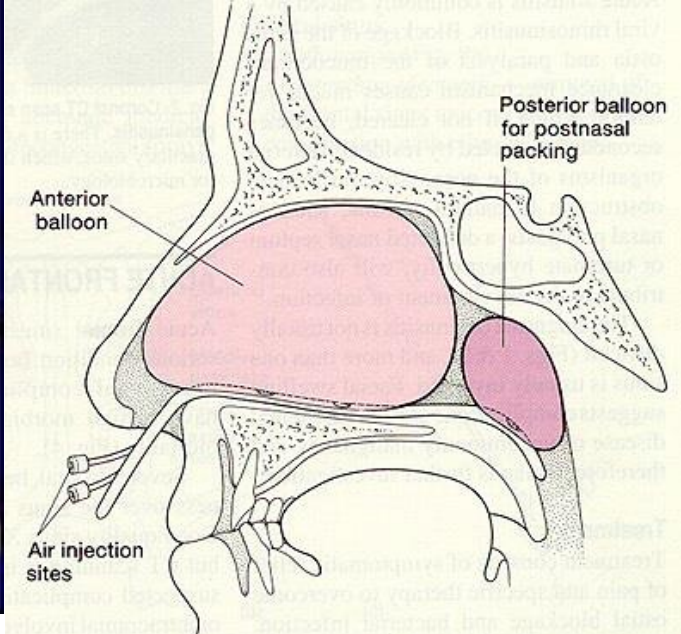
1. **gauze packs** inserted transorally and positioned by means of tapes pass from the posterior choana to anterior nares bilaterally.

2. **Foley urethral catheter**. and anterior nasal packing inserted.

3. **Nasal balloon: use anterior and posterior nasal balloon –integral airway.**

****** Pack should be left in position for minimum for 48 hours.





Anterior and posterior nasal balloon –integral airway. Alar nasal necrosis.using Folly's catheter

Complications of posterior nasal pack:

*Necrosis of septum and columella , and alar nasi ,*Sinusitis,* otitis media.

*Hypoxia so the patient must admitted in the hospital in elderly (ICU). Antibiotics, and analgesia are necessary.

* **Never pack the nose** of unconscious patient when skull fracture or cribriform plate injury is suspected

IV. Arterial ligation :

Indications: Intractable bleeding cannot be located or controlled by the methods described

- 1* Ligation of external carotid a.
- 2* Ligation of internal maxillary a.
- 3* Ligation of anterior/posterior ethmoidal a.
- 4* Endonasal sphenopalatine a. ligation.



**** .Selective *angiography and Embolization***

- Indications: Intractable bleeding from surgically inaccessible sites, patient not fit for surgery.

It can be done under local anesthesia .it is diagnostic (defines bleeding site) and therapeutic, may be repeated

Only able to embolize external carotid & branches

****Hot water irrigation.**

V:Search for causes treated.

Investigations:

Lab. Tests :CBP (Hb, WBC and differential count, Blood film,Platelet count, PT, PTT, CT, Factor assay ,Liver function test, B. urea, Serum creatinine, ...

Radiological tests. tailored accordingly

Plane X- ray, CT scan, MRI of nose and paranasal sinuses. *Angiography angiofibroma

*Biopsy for mass

Treatment.

Systemic medical therapy.

- * **systemic inhibitors of fibrinolysis. Tranexamic acid and epsilon aminocaproic acid .**
- * **Control Hypertension. treat renal failure ,thrombocytopenia**
- * **Correcion of coagulopathy. and thrombocytopenia(FF Plasma, Whole blood, Platelete, . cryoprecipitate. Factor VIII,IX.**

Surgery

- * **Septoplasty for access to bleeding point.**
- * **Remove of tumor ex. angiofibroma**
- * **Septodermoplasty for Osler's disease(remove of anterior half of nasal septum and floor and lateral wall of the nose, with skin graft ,sever condition close of the nose. ,**
- * **Nd -YAG Laser.**