Lecture 5

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EPISTAXIS

Epistaxis is the commonest otolaryngologic emergency, affecting up to 60% of the population in their lifetimes, with 6% of cases requiring medical attention.

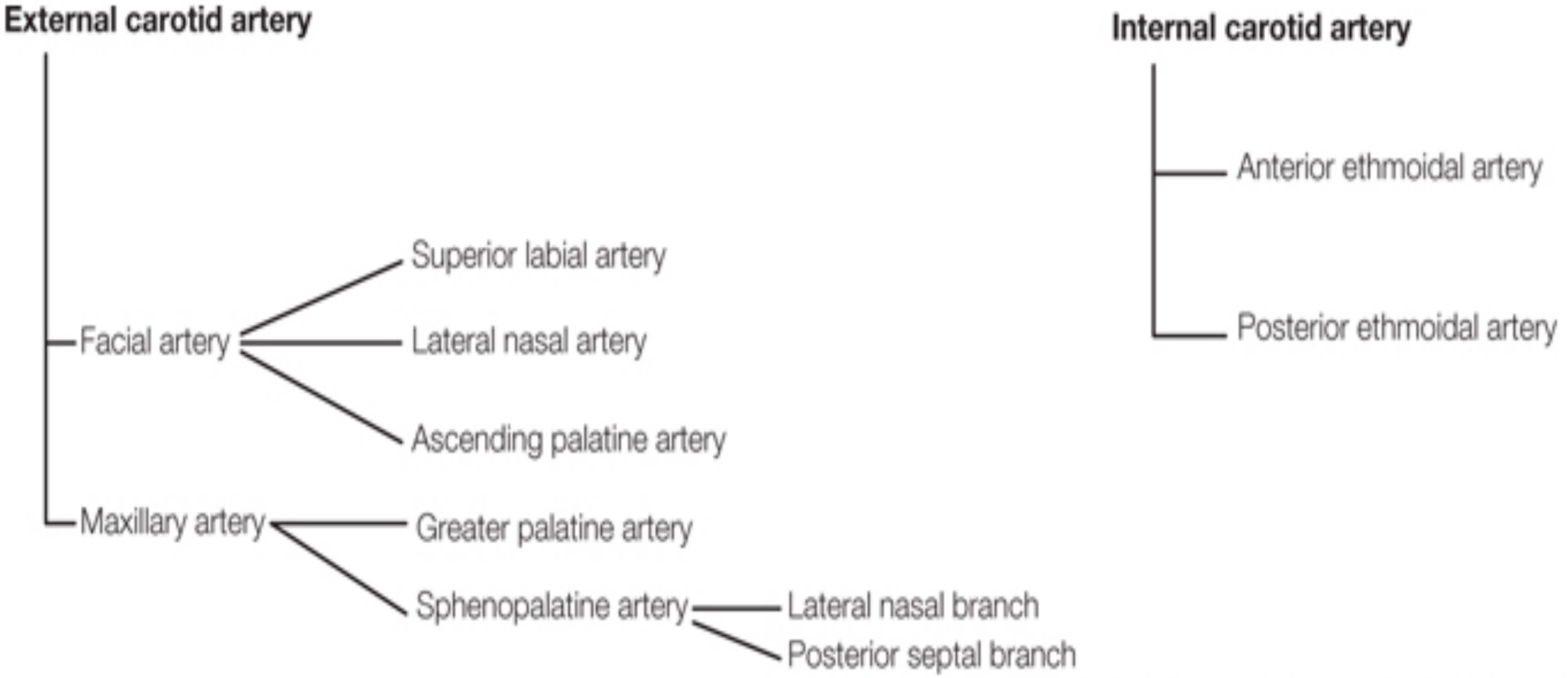
The nasal cavity is extremely vascular.

Terminal branches of the external and internal carotid arteries supply the mucosa of the nasal cavity

with frequent anastomoses between these systems

The anterior nasal septum is the site of a plexus of vessels called Little's or Kiesselbach's area, which is supplied by both systems

The maxillary sinus ostium serves as the dividing line between "anterior" and "posterior" epistaxis.



Arterial supply

external carotid artery- → facial artery- → superior labial artery

nasal branch

maxillary artery- → sphenopalatine

greater palatine artery

internal carotid artery- → anterior ethmoid artery

posterior ethmoid artery

Little`s area or Kiesselbach`s plexus

It is an area in the anterior part of the septum just behind the skin margin contain aggregation of poorly supported blood vessels represents the most important and commonest site of epistaxis

It formed by anastamasis of

***Septal br.of sphenopalatine artery**

***Superior labial artery**

Greater palatine artery*

***Ant.ethmoid artery**

Aetiology

A idiopathic---------from little`s area

B Trauma

Nose picking

F.B

Maxillofacial trauma

Itrogenic

C infection acute or chronic.viral or bacterial

D Inflammatory

Rhinosinusitis

Nasal polyp

E Neoplasm

Benign angiofibroma, papilloma

Malignant

sq.cellcarcinoma,adenocarcinoma, lymphoma

F Drug induced

Cocaine abuse

Rhinitis medicamentosa

medicamentosa,asprin,anticoagulant.chloramphinicol,immunosuppressant,alcohol

G inhalant

Tobacco

H endocrine

2 General

A atherosclerosis

B bleeding disorder

A coagulopathy

1inhereted coagulation factors deffeciancy like factor vii,factor ix

2acquired :anticoagulant,liver disease,vitamin k defficiancy

B platelate disorders

- thrombocytopenia
- - platelate disfunction
  - ► congenital like vonwillbrand disease
  - ►► acquired like leukemia,uremia,drugs as asprin & NSAID

C blood vessel disorders

- congenetal----osteogenesis imperfecta
- - acquired-----amyloid,vasculitis,vit.K defeciancy

D hyperfibrinolysis

- congenital------αantitrypsin deficiency
- - acquired------malignant DIC

Anterior bleeding is usually easier to access and is therefore less dangerous. Posterior epistaxis is more

difficult to treat because visualization is more difficult and blood is often swallowed, making it more difficult to gauge the amount of blood loss

The term "posterior bleeding" is all too often used incorrectly to label bleeding that cannot be visualized with a head lamp. It transpires in many cases that endoscopic examination shows the bleeding to be located high on the septum

Classification

Primary No proven causal factor

Secondary Proven causal factor

Childhood <16 years

Adult >16 years

Anterior :Bleeding point anterior to piriform aperture

Posterior :Bleeding point posterior to piriform aperture

The maxillary sinus ostium serves as the dividing line between

“anterior” and “posterior” epistaxis

Classification

Anterior epistaxis

Incidence---- Amore common

Site---------mostly from little`s area or anterior area of the nose

Age---------mostly occur in children or young adult

Cause------mostly trauma

Bleeding---usually mild,can be easily controlled by local pressure or anterior pack

posterior epistaxis

Incidence---- less common

Site---------mostly from posterosuperior part of the nasal cavity,often difficult to localize the bleeding point

Age---------mostly occur after 40 yerars of age

Cause------spontanous,often due to hypertention or atherosclerosis

Bleeding---bleeding is sever,requires hospitalization,post nasal packing often required

How do manage a patient with epistaxis?!

Management

Initial Assessment

The amount of blood loss should be estimated (the physician should ask about whether the patient has lost enough to soak a handkerchief, a facecloth, or a towel; the last would indicate a significant loss), and over what period (a regular minor bleed can cause anemia).

A clinical assessment of the patient's cardiac status and circulating blood volume should include looking to see if the patient is pale, sweating, or cool, or has tachycardia; any of these findings would indicate significant hypovolemia. A reduction in blood pressure is often a late sign, particularly in young people, who can maintain blood pressure until the circulatory volume is critical.

Obtaining intravenous access, checking for and correcting any clotting abnormalities, and taking blood for "group and save" and/or crossmatching may be required. In our unit patients admitted via the emergency department can be "fast-tracked" to the otorhinolaryngo-

- logic emergency unit if stable This practice helps avoid unnecessary and counterproductive nasal packing in the emergency department as well as transfer of patients before they are fit enough to travel.

First aid measures **include asking the patient to apply constant firm pressure over the lower (non-bony) part of the nose for 20 minutes and to lean forward with the mouth open over a bowl so that further blood loss can be estimated. Otherwise, blood dripping postnasally will be swallowed, and the next warning sign of a serious loss could be several hundred milliliters of blood being vomited up.**

It is important to establish both the site and the cause

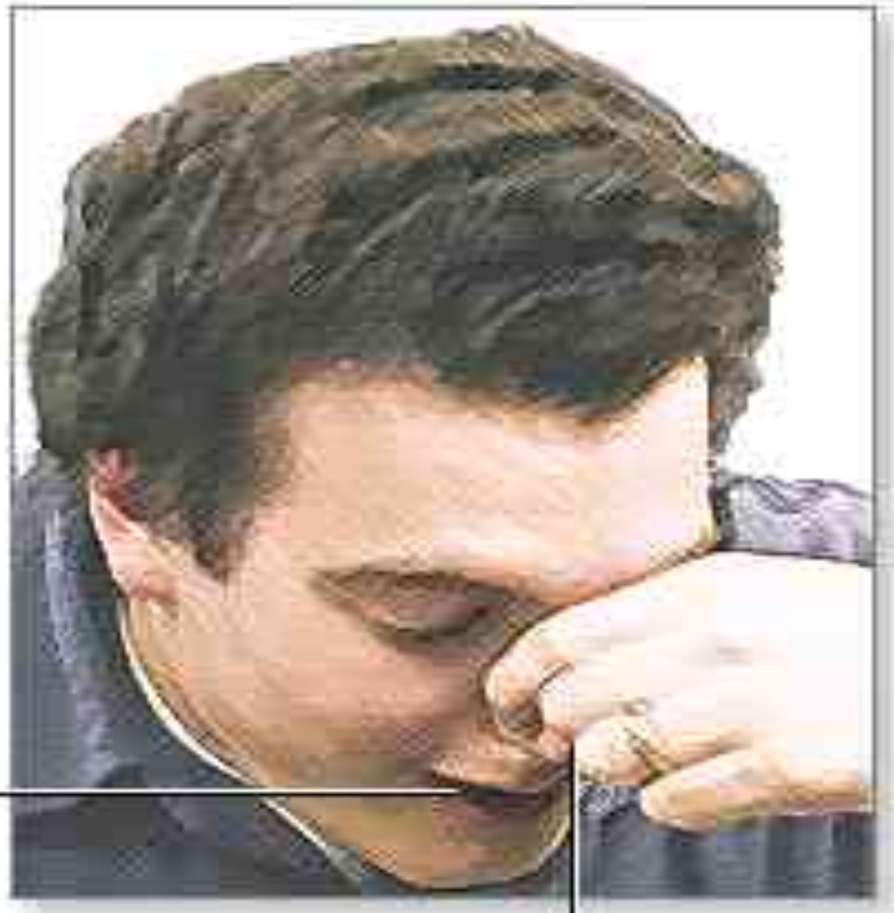
The philosophy of this approach can be summarized as follows:

1. Establish the site of bleeding.

2. Stop the bleeding.

3. Treat the cause.

Sentarse e inclinarse levemente hacia adelante



Respirar por la boca

Taparse las fosas nasales con los dedos

The clinician must remember that epistaxis is frequently idiopathic but can be a manifestation of a possible underlying pathology. Your patient should undergo further investigationaccording to the history.

The key to controlling most epistaxis is to find the site of the bleeding, and although chemical cautery with silver nitrate can be used, Biopolar diathermy is more effective for stopping the bleeding. Protection from blood contamination is important. A plastic apron for both parties is helpful in order to avoid staining of clothes, and eye protection is advisable if there is active bleeding because some patients have a reflex to blow away any fluid dripping down the upper lip, which can create a bloody aerosol. Once the clots have been sucked out, the nasal airway should be inspected, initially with a headlamp and then, if the bleeding point cannot be located, with an endoscope.

Epistaxis in Children

Young children usually bleed from a vessel just inside the nose at the mucocutaneous junction on the septum, and the bleeding invariably stops spontaneously. In children with epistaxis in whom no prominenvessel can be seen, the regular local application of a cream can help, but petroleum jelly (Vaseline) alone does not.

As many as 5% to 10% of children with recurrent nosebleeds may have undiagnosed von Willebrand's disease.

Children who have leukemia or are undergoing chemotherapy often have epistaxis associated with thrombocytopenia. Older children, adolescents, and adults often bleed from Little's area or a maxillary spurt

Epistaxis in Adults

The caudal end of the septum, where several branches of the external and internal carotid anastomose in Little's area or Kiesselbach's plexus, is the most common site of bleeding in adults.
Less commonly bleeding,
comes from further back on the septum, and a septal deviation may make it difficult to visualize .Some patients with seasonal allergic rhinitis complain of more nosebleeds in the hay fever season, and topical nasal steroids aggravate the bleeding in approximately 4% of users. Many people believe that a nosebleed signifies a release of pressure and may herald a stroke, and it is important for the clinician to address these anxieties for the patient. Although many patients are found to be hypertensive during nosebleeds, few remain soon follow-up. The association between hypertension and epistaxis is disputed. Many clinicians report that hypertension is not related to nosebleed. However, nosebleeds in patients with hypertension are more likely to lead to admission and to be associated with comorbidity.

In over-anticoagulated patients, fresh frozen plasma, clotting factor extracts, and vitamin K help. Vitamin K takes more than 6 hours to work, however, and it can delay anticoagulation for 7 days after warfarin is started.

. Tranexamic acid (Cyclocapron), an antifibrinolytic agent, has not been shown to help. But other litriture advice to give it Scott brown) Tranexamic acid has been shown to reduce the severity and risk of rebleeding in epistaxis at a dose of 1.5 g three times a day. These drugs do not increase fibrin deposition and so do not increase the risk of thrombosis. Preexisting thromboembolic disease is a contraindication Other drugs associated with bleeding are aspirin, which interferes with platelet function for up to 7 days, clopidogrel, and nonsteroidal antiinflammatory drugs.

In patients who do not have a history of a bleeding disorder or undergoing anticoagulant therapy, routine clotting studies do not add to the management. There is a higher incidence of epistaxis in patients with a high alcohol intake, even when there is no laboratory evidence of a coagulation abnormality.

Topical Treatment

A randomized controlled trial of silver nitrate cautery with topical antiseptic nasal carrier cream versus topical alone showed both to be effective

Use of cold pack is advisable although hot water irrigation 50c has been proposed as an alternative to packing

Nasal Packing

If a bleeding point cannot be found, ideally the nose is packed with an absorbable hemostatic agent that produces minimal mucosal trauma. Various nonabsorbable packs have been used, but their insertion is uncomfortable, as is their presence once in position. The insertion of a pack can cause local mucosal trauma and complicate localization of the bleeding point The insertion of a nasal pack has conventionally meant that the patient has to be admitted, although one study discharged 46 of 62 patients whose nasal airways had been packed, with outpatient follow-up arranged for 48 hours later If anterior packing fails, a posterior balloon may have to be placed and inflated in the postnasal space

Cautery

Most anterior epistaxis can be controlled with identification of the bleeding point and cautery using a headlamp. The vast majority of posterior bleeding sites can be identified by endoscopy without the use of general anesthesia

After cautery the patient should be advised against blowing the nose for about 10 days to allow the area to heal. A greasy antiseptic barrier cream should be applied several times daily for 2 weeks to prevent the eschar from drying and coming off with a resulting rebleed. The ointment should not be placed directly on the area treated but is best placed inside the rim of the nostril with the tip of the finger, and "milked up" by massaging the nostril rims, and then sniffed up. This advice can also be given to patients with a crusted septal area from picking or excessive drying

. An anterior pack is then placed, and gentle traction used to pull the balloon forward against the anterior pack this arrangement is held by placement of a clip over the catheter anteriorly as it emerges through the anterior pack The morbidity and physical discomfort associated with nasal packing includes pain, hypoxia, alar necrosis, and toxemia, and is well described in the literature; Packing not only traumatizes the nasal lining but also can cause cardiorespiratory complications and local infection.46 The role of prophylactic systemic antibiotics in patients who have nasal packs is not well established. If the patient does not experience rebleeding within 12 to 24 hours, the packs should be removed

If bleeding continue,

Septal surgery

When epistaxis originates behind a prominent septal deviation or vomeropalatine spur, septoplasty or submucosal resection (SMR) may be required to access the bleeding point. Some authors have advocated septal surgery as a primary treatment for failed packing. The rationale is that by elevating the mucoperichondrial flap for septoplasty or SMR, the blood supply to the septum is interrupted and haemostasis secured. Cumberworth *et al*.58 showed a strategy involving SMR and repacking to be more effective and economic than ligation in patients who had failed with packing.

If bleeding continue,

Endoscopic sphenopalatine artery ligation (ESPAL);

has replaced the need forposterior nasal packs

,

If bleeding continue,

Ligation of ant ethmoid artery

Ligation of posterior ethmoid artery

Ligation of external carotid artery

Angiography and embolization under angiographic guidance has been shown to control severe epistaxis

Embolization

thank you

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