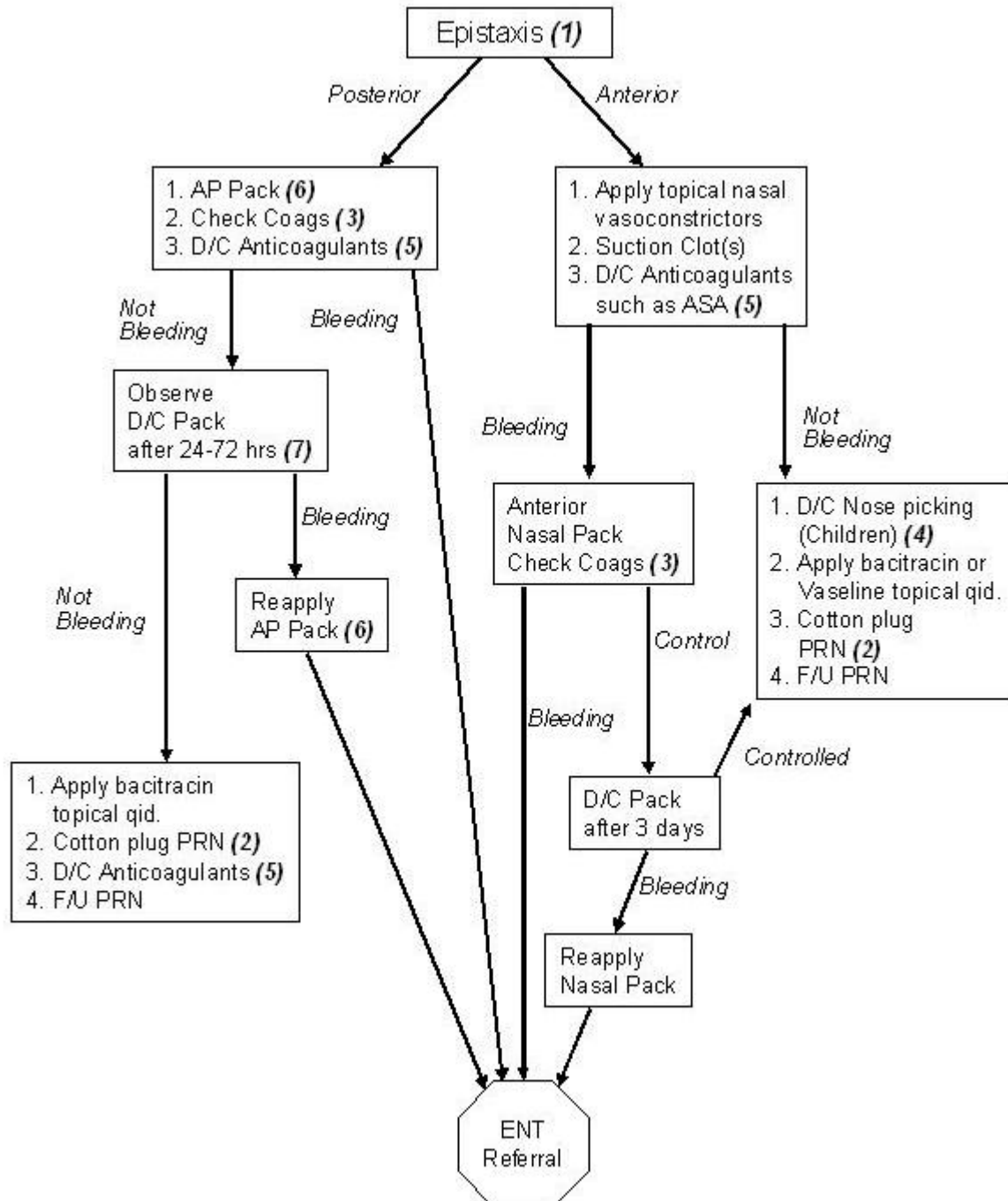




*Ambulatory Healthcare Pathways for Ear, Nose, and Throat Disorders*

**NOSE**

**EPITAXIS**



#### A. Coagulation work up

1. Hemoglobin/hematocrit
2. Partial thromboplastin time
3. INR
4. Platelet Count
5. IVY Bleeding Time

#### B. Topical Vaseline

Vaseline applied to the anterior nose qid keeps the mucosa moist and dramatically reduces recurrent nose bleeds. For the elderly and for others with recurrent epistaxis, topical Vaseline bid is excellent prophylaxis.

#### C. Cotton Plug

The nose is a vascular organ and responds actively to airflow. A cotton ball saturated in bacitracin ointment positioned in the anterior nasal chamber obstructs the airflow, moistens the mucosa, and impairs bacterial growth. This places the nasal mucosa at rest and promotes healing of the damaged, dilated blood vessels.

#### D. Epistaxis Tray

1. Instruments:
  - a. Head light
  - b. Nasal speculum
  - c. Frazier (neurosurgical) sucker
  - d. Bayonet forceps
  - e. Bandage scissors
  - f. Medicine cup 2 oz.
  - g. 10 cc syringes (3)
  - h. Needles: 25 gauge spinal, and 27 and 30 gauge hypodermic
2. Medications:
  - a. 1% lidocaine with 1:100,000 epinephrine
  - b. Cocaine 160 mg (4 cc of 4% solution)
  - c. AgNO<sub>3</sub> cautery sticks
  - d. Surgicel®
  - e. Bacitracin ointment
3. Anterior Packs
4. Vaseline gauze 1/2 x 36 inches (2)
5. MeroCel Fast-pak Nasal Tampon® (Xomed)\*
6. Rhinorocket® (Shippert Medical Tech)\*\*
7. Posterior packs:
  - a. Epistat® (Xomed)\*
  - b. Rapid Rhino (Allied Therapeutics) \*\*\*

- c. Epistaxis Catheter T-3100® (Bausch Lomb Surgical)\*\*\*\*
- d. Foley catheter, #16 with 30 cc balloon
- e. 0 Silk Sutures
- f. 4 x 4 gauze sponge
- g. Umbilical clamp

- E. Nose bleeds in children are either early manifestation of coagulopathy or most commonly the result of nose picking. Nocturnal nose picking is cured by placing baseball batting or gardening gloves on the hands of the sleeping child.
- F. Many adults take one aspirin daily. Most use 325 mg p.o. daily. 80 mg will protect the heart and leave the nose alone.
- G. There are many anterior posterior (AP) nose packs. The one we use is the Epistat® by Xomed and the Rapid Rhino® by Applied Therapeutics, Inc. Other commercial AP balloons are available. You can fashion your own with a Foley balloon for the posterior choana and layered gauze for anterior packing. The AP pack is the only quick means to control posterior or difficult, diffuse epistaxis.
- H. How long to leave a posterior pack is controversial. Convention is 5 days. Three days seems to work well. Whether this can be further shortened requires case by case clinical judgment. It is difficult to find consensus on anterior-posterior packs. Having spoken with numerous ER physicians, primary care providers and practicing otolaryngologists, it is the author's opinion that a number of nose bleeds not easily controlled with simple anterior packs are controllable with balloon anterior posterior packs. More difficult posterior bleeds require ENT referral. Those requiring a posterior pack are uncomfortable and will require narcotics for the pain. There is a frequently observed phenomenon in which individuals with posterior packs have a diminished pulmonary drive and will often have decreased oxygenation. This combined with sedating analgesia mandates hospital admission and monitoring.
- I. The difficult nose bleed easily controlled with a balloon anterior posterior pack, who does not require anything more than Tylenol® for pain, whose oxygenation remains normal for an hour or two of observation in the office or emergency department, and who has strong family support to observe them, may be sent home. The decision to deflate the balloon at 24, 48, or 72 hours is made on a case by case basis.

## ***Overview of Epistaxis***

Nose bleeds are very common. The majority are controlled by time and direct pressure. Anterior rhinoscopy will often show a dilated septal mucosal vessel with an overlying sore or scab.

Treatment consists of placing the mucosa at rest with a small cotton plug and vasolinated ointment for 3–5 days. Thereafter, the individual can apply the vasolinated ointment to their nose 2, 3, or 4 times daily. For those on anticoagulants coagulation labs should be carefully checked and monitored. For patients taking aspirin for arteriosclerosis prophylaxis, 80 mg of aspirin is sufficient. Most use 325 mg daily, as the adult aspirin tablets are easier to find and cheaper.

Most people over clean their nose most commonly with Kleenex nasal tissues. The septum is not to be rubbed. Teach patients to blow their nose without rubbing or touching the nasal septum.

If the vessel continues to bleed, it may benefit from cautery. Silver nitrate cautery will stop some. Others will require electric cautery. Never cauterize both sides of the septum at the same time for this puts the patient at risk for septal perforation. A few patients develop profuse epistaxis and these invariably come from medium sized arteries in the superior and posterior nasal cavities. These are only controlled via tamponade of the bleeding vessel, accomplished by occluding the posterior choana and the anterior naris—commonly called an anterior-posterior pack.

Assuming ENT referral is available, this is recommended. The otolaryngologist will typically vasoconstrict and anesthetize the nose and then endoscopically examine the nasal cavity. If the bleeding artery can be identified, it can be cauterized. If the bleeding is profuse and endoscopy is impossible, if the septum is tortuous, or the anatomy is such that the bleeding site cannot be seen, the otolaryngologist can place a more secure anterior-posterior pack. Treatment alternatives are then threefold. The most conservative conventional approach is to hospitalize the patient and leave the packing in place for 3–5 days. The packing is then removed and most patients are successfully discharged.

Three to five days of hospitalization is expensive. The anterior-posterior pack is uncomfortable. A surgical alternative is to anesthetize the patient, examine the nose endoscopically, and cauterize the bleeding vessel. If the septum prevents this, a septoplasty is performed. If this is not successful then the internal maxillary artery and its contributing branches can be ligated in the sphenopalatine fossa behind the maxillary sinus. These are accessed through a standard Caldwell-Luc procedure.

Fifteen percent of nose bleeds arise from the ethmoid vessels, and in these cases an

additional incision will be made between the nose and the eye and the anterior and posterior ethmoid arteries clipped.

The third alternative is to perform an arteriogram. Bleeding coming from the internal maxillary artery can be embolized. The anterior ethmoid arteries arise from the ophthalmic artery which in turn arises from the internal carotid. These are not amenable to embolization.

The disadvantages of arteriography and embolization are the expense and the small risk of a stroke. The skilled interventional radiologist experienced in embolization can do this reasonably well with reasonable safety. For the most part, angiography and embolization are ideal very sick individuals who are significantly anticoagulated and for whom surgery is not a safe option.

Nose picking is a contributing factor in epistaxis. Adults can usually be instructed to be more careful. Children pick their nose at night and this is best controlled by placing a glove or sock over their hand so that their fingers no longer fit inside their nose. Dry climates predispose to recurrent nose bleeds. Daily or twice daily application of Vaseline® provides substantial benefit. The petroleum based antibiotics are not recommended as these predispose to topical sensitivity. Bacitracin® ointment contains the necessary petroleum properties and is bacteriostatic. Other petroleum products work equally well.

There is a caveat for nose bleeds. While most are simple, straight forward problems, they are often the heralding sign of underlying coagulopathy. Hemophilia, von Willibrand's disease, thrombocytopenia, all may have epistaxis as their initial symptom.