



ENTs: Not-So-Easy Emergencies

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Presented at CME for Family Physicians: ENT Day, University of Manitoba (October 2003).

Epistaxis is a common condition, with severity ranging from mild and annoying to severe and life-threatening. Most epistaxis (90%) is anterior, originating from the anterior nasal septum (known as Little's area). In the mucosa covering Little's area, there are multiple anastomoses of end arterial branches from both carotid systems, known as Kiesselbach's plexus.

Posterior epistaxis refers to an anterior site which cannot be visualized and often involves branches of the sphenopalatine artery (Figure 1).

Causes of epistaxis can be local and systemic (Table 1). The typical case presentation includes:

- young child with rhinitis and digital trauma;
- patients on acetylsalicylic acid (ASA) or anti-coagulants; and/or
- elderly patients with arteriosclerosis and hypertension.

When assessing a patient with epistaxis, the treatment priority is to manage life-threatening conditions first and to stabilize the airway, breathing, and circulation. The history can then focus on the nosebleed itself. It is helpful to determine:

- amount of blood loss,
- frequency of bleeding,
- severity of bleeding,
- location (left vs. right, anterior vs. posterior) of the bleed,
- duration, and
- previous episodes and treatments rendered.

Fred's Resolution

Fred, 65, presents to the emergency department with a two-month history of recurrent left anterior epistaxis. The bleeding lasts five minutes and resolves with pinching the nostrils shut. He has a history of medication-controlled hypertension and is taking acetylsalicylic acid (ASA). Silver nitrate cautery fails to control the bleeding adequately and an anterior gauze pack is placed. The pack is removed two days later and the bleeding does not recur.



- 1. What advice should be given after the packing is removed?**
- 2. What can patients do to prevent minor recurrences?**
- 3. Can topical nasal steroid sprays prevent nosebleeds?**
- 4. When do I refer a patient with epistaxis?**

For answers to these questions, go to page 68.

Table 1

Causes of epistaxis

Trauma

- External
- Digital
- Surgical
- Foreign body

Environmental

- Dryness

Inflammation

- Allergic rhinitis
- Wegener's granulomatosis

Structural

- Deviated nasal septum
- Septal perforation

Hereditary

- Hereditary hemorrhagic telangiectasia

Neoplastic

- Hemangioma
- Carcinoma

Bleeding disorders

- Platelet disorders
- Coagulopathies

Medications

- Acetylsalicylic acid
- Non-steroidal anti-inflammatory agent
- Anticoagulants
- Cocaine

Systemic disease

- Alcoholism
- Kidney
- Liver disease

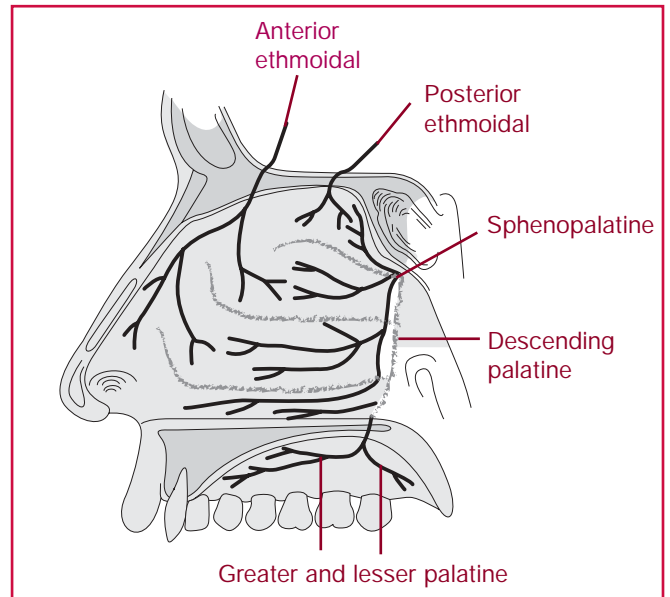


Figure 1. Arterial blood supply of the lateral wall of the nose.

The physical examination should include a thorough head and neck examination with special attention to the nose, nasopharynx, and oropharynx.

Depending on the severity of the nosebleed, initial laboratory tests could include:

- hemoglobin and hematocrit,
- platelet count,
- group and hold or group and match,
- prothrombin and partial thromboplastin time (PT and PTT), or
- blood urea nitrogen, creatinine, and liver function tests.

Who is most at risk?

Elderly patients with arteriosclerosis and hypertension can present with profuse, difficult-to-control, posterior nosebleeds, particularly if they are on ASA or anticoagulants. They are at increased risk for cardiorespira-



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tory complications due to hypovolemia, coronary arteriosclerosis, and potential hypoventilation from nasal packing. If posterior packing is placed, electrocardiogram (ECG), chest X-ray, and oxygen saturation should be checked.

What is the GP's role?

Successful management of epistaxis requires an organized and systematic approach to the problem. The ability to properly examine the nose and perform procedures, such as silver nitrate cautery and placing an anterior nasal pack, can all be within the GP's response. If the bleeding is profuse, physicians should wear protective gear, such as a mask, face shield, and gloves. An assistant is also helpful to pass instruments and to monitor the patient. Necessary equipment is listed in Table 2.

Once ready, physicians should have patients blow their nose, or suction any clots from the nose. Topical anesthetic and decongestant can then be applied to the cotton balls and placed in the nose. If the bleeding is not overly profuse, time can be spent adequately preparing the nose, which allows for a more comfortable patient and thorough examination. If a bleeding site is identified, silver nitrate can be applied directly to the area. Firm pressure should be applied for at least 10 seconds, or for as long as the patient can tolerate. Overzealous cautery should be avoided. To prevent future septal perforation, the area on the opposite side of the septum should not be cauterized.

If cautery is unsuccessful, or if the bleeding is too vigorous, an anterior pack can be applied (Figure 2). Vaseline® gauze or quarter-inch ribbon gauze coated with antibiotic ointment can

Table 2

Necessary battle equipment

- Headlight
- Nasal and tonsil suction tubes and suction
- Nasal speculum, bayonet forceps
- Cotton balls or neuropatties
- 4% aqueous topical xylocaine and topical decongestant
- Silver nitrate sticks
- Vaseline® gauze or Merocel® nasal packs
- Absorbable packing

be layered tightly in the nasal cavity in an anterior to posterior and inferior to superior direction.

Absorbable packing is useful, as it does not require removal. This is ideal for children or patients with bleeding disorders who frequently rebleed when packing is removed.

Non-absorbable packing may be left in place for two to five days. The patient should be placed on an oral antistaphylococcal antibiotic and advised to perform only light activities for a week.

What if anterior packing fails?

Insert a posterior pack, a Foley catheter or a posterior gauze pack (Figures 3, 4), into the nasopharynx to serve as a buttress for an anterior gauze pack, which is then placed.

All patients with posterior packs should be admitted to hospital for cardiac, oxygen saturation, and fluid monitoring. Hypoventilation and cardiorespiratory can occur.

Should posterior packing fail, alternative interventions include:

- endoscopic transnasal electrocautery,
- endoscopic transnasal sphenopalatine

Case Followup

1. What advice do I give patients after the packing is removed?

- Light activity for 1 week
- Avoid hot or spicy foods
- No ASA or NSAIDs
- No nose-blowing or picking
- Sneeze with your mouth open
- Use a topical nasal saline spray tid or qid
- Apply a topical nasal lubricant

2. What can patients do to prevent minor, recurrent epistaxis?

- No nose-picking
- Use a topical nasal lubricant and a topical nasal saline spray daily during the fall and winter

3. Can topical nasal steroid sprays prevent nosebleeds?

- Improper positioning of the spray bottle in the nose can actually cause nosebleeds
- Topical nasal steroid sprays can reduce nasal inflammation in allergic rhinitis and may help prevent nosebleeds in some patients

4. When do I refer a patient with epistaxis?

- Failed nasal packing
- Suspicion of a nasal mass
- Recurrent epistaxis in a pubertal male (beware of juvenile nasopharyngeal angiofibroma)
- Severe epistaxis from a nasal fracture (may have bleeding from ethmoid artery)
- Hereditary hemorrhagic telangiectasia

ASA: Acetylsalicylic acid

NSAIDs: Nonsteroidal anti-inflammatory agent

tid: Three times a day

qid: Four times a day

artery ligation,

- ethmoid artery ligation,
- internal maxillary artery ligation,

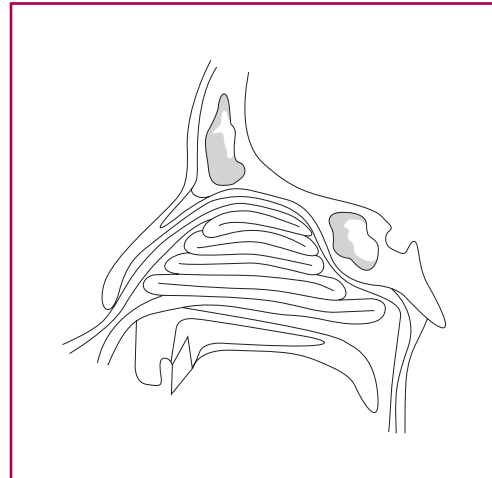


Figure 2. Anterior gauze pack.

- septoplasty, or
- internal maxillary artery embolization.

Epiglottitis

Epiglottitis, or supraglottitis, is a life-threatening infection of the supraglottic larynx. It is usually a bacterial infection caused by hemophilus influenzae B (HIB).

The overall incidence of epiglottitis has been decreasing since the introduction of the HIB vaccine in 1985. Although the classic age of presentation is between two and six, more children under two, adults, and immunocompromised patients are presenting with epiglottitis. Reported mortality rates range from 1% to 10%, but rapid diagnosis and appropriate treatment can reduce the mortality rate to < 1%.

Classically, patients present with rapidly progressive symptoms, which can be remembered as the 4 Ds:

- Drooling
- Dysphagia

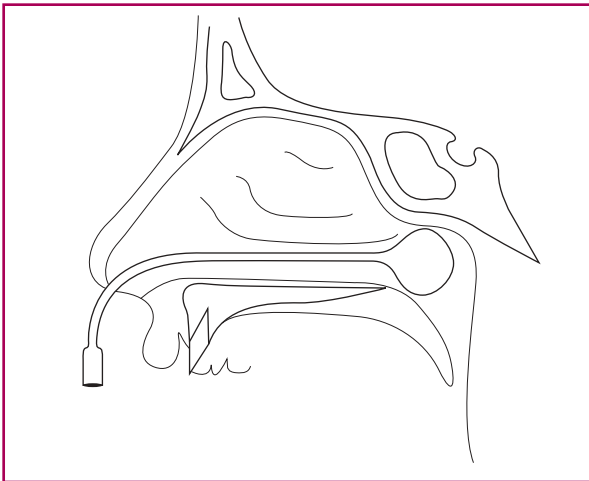


Figure 3. Foley catheter in nasopharynx.

- Dysphonia
- Dyspnea

Adults typically complain of a severe sore throat and odynophagia. Other symptoms include fever, chills, otalgia, cough, and headaches. Signs include muffled voice, ten-

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der cervical lymphadenopathy, stridor, and agitation. While the duration of symptoms prior to presentation can range from hours to days, once respiratory symptoms occur, they usually progress rapidly.

Who is in danger?

Given their smaller airways, children with epiglottitis are at the most risk for complications. Children usually present with symp-

toms and signs of respiratory distress. They typically appear sick, have a high fever, and assume a head-forward sniffing position. The differential diagnosis includes croup, retropharyngeal abscess, obstructive tonsillitis, bacterial tracheitis, and foreign body aspiration.

What can you do?

Successful treatment depends on the rapid recognition of epiglottitis and immediate, appropriate management. The first priority is maintaining the airway immediately after the diagnosis is suspected.

An adult with suspected epiglottitis requires airway intervention by intubation, cricothyroidotomy, or tracheotomy. If the airway is stable, tests such as lateral neck soft tissue radiographs, direct laryngoscopy, indirect mirror laryngoscopy, or fiberoptic laryngoscopy can be performed. Radiographic signs of the condition include obliteration of the vallecula (vallecula sign), swelling of the epiglottis (thumbprint sign), and swelling of the arytenoids and aryepiglottic folds.

Laryngoscopy is the best method to evaluate epiglottitis, and can usually be performed in adults without risking their airway. Laryngoscopic signs include diffuse erythema and edema of the supraglottic larynx, especially if a swollen, cherry red epiglottis is seen.

Children with suspected epiglottitis and airway compromise should be taken to the operating room (OR) immediately. Radiographic assessments, laryngoscopy, and intravenous placement are deferred until

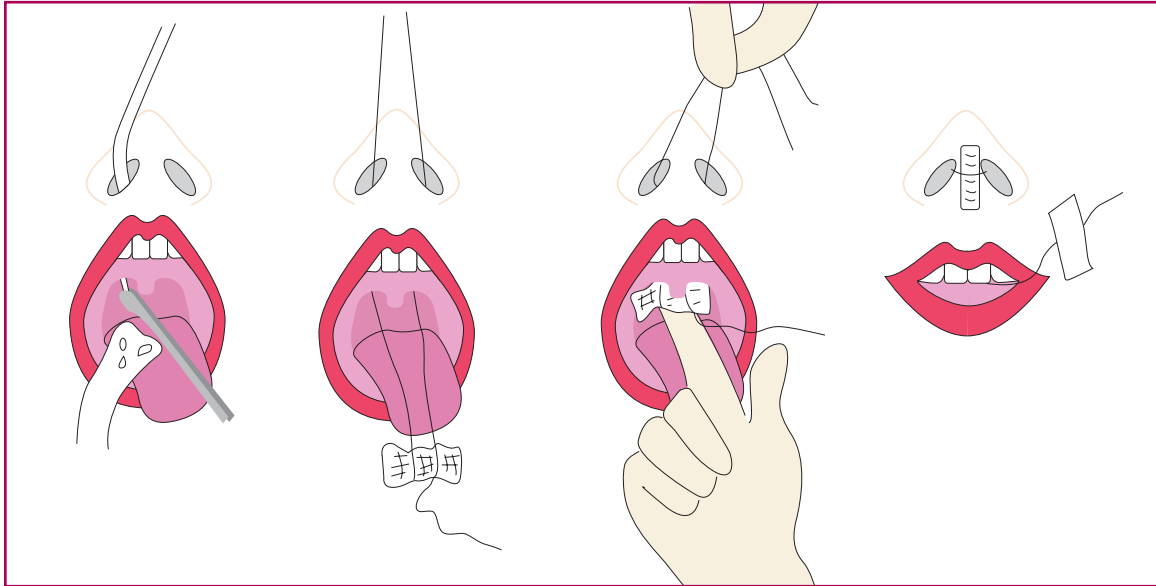


Figure 4. Demonstration of how to place a gauze pack.

the airway is secured.

The diagnosis can be made by direct laryngoscopy. Equipment for rigid laryngoscopy, rigid bronchoscopy, and tracheotomy should be available if intubation is difficult or unsuccessful.

In a child with suspected epiglottitis and a stable airway, lateral neck radiographs can be performed. If the radiograph is suspicious

Blood and direct epiglottic cultures are positive in 10% to 75% of patients.

for epiglottitis, the child should be taken to the OR for laryngoscopy and intubation. Once the airway is secured, a complete blood cell count and blood cultures can be drawn. Blood and direct epiglottic cultures are posi-

Take-home message



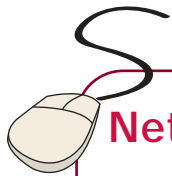
- Patients with epistaxis are typically young children with rhinitis and digital trauma, patients taking ASA or anticoagulants, or elderly patients with arteriosclerosis and hypertension.
- Symptoms of epiglottitis classically follow the 4Ds: Drooling, Dysphagia, Dysphonia, and Dyspnea.
- If posterior packing fails, interventions include ethmoid artery ligation, septoplasty, internal maxillary artery embolization, and endoscopic transnasal electrocautery.

tive in 10% to 75% of patients. Intravenous antibiotics, effective against HIB (*i.e.* second or third-generation cephalosporins), are started. Systemic antibiotics are then given for a period of 14 days. Patients remain intu-

bated until systemic signs of infection improve and examination of the epiglottis shows improvement in the supraglottic swelling. **CME**

Suggested readings

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Net Readings

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2. Virtual Children's Hospital®
www.vh.org/pediatric/provider/pediatrics/ElectricAirway/Text/Epiglottitis.html

www.stacommunications.com



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