

Chapter 6

Epistaxis

Epistaxis is a common problem; although the vast majority of cases are trivial, some may present as life-threatening problems because of hypotension or aspiration of blood.

Review the anatomy of the nose as shown in Fig. 4.1. The nasal septum is supplied mainly by the anterior ethmoidal artery and the nasopalatine artery, which anastomose at the anterior and inferior aspect of the septum. This anastomosis forms Kiesselbach's plexus, which is a common site of nasal bleeding. The lateral wall of the nose is supplied by branches of the anterior and posterior ethmoidal arteries, and the sphenopalatine artery.

Common etiologies of epistaxis include mechanical trauma (nasal manipulation, foreign bodies, blunt trauma, including fractures), infection (viral rhinitis, bacterial sinusitis), inflammation (chronic drying and erosion of the nasal mucosa from dry or cold air), drugs (platelet inhibitors, anticoagulants), blood dyscrasias (thrombocytopenias, hemophilias), and tumors (angiofibromas, teleangiectasias, Wegener's granulomatosis). A brief medical and drug history will help sort out the diagnosis.

The physical examination should begin with a measurement of the patient's vital signs; inspection of the skin for teleangiectasia, purpura, or petechiae; examination of the neck for lymphadenopathy (surrogate marker for malignancy); and examination of the mouth for teleangiectasia or dental trauma. The nose will require meticulous rhinoscopy with an adequate light source, and suctioning of blood or blood clots. Laboratory services may be required to assess CBC, PT/INR, PTT and provide a group and screen for those patients with life-threatening epistaxis or epistaxis secondary to a blood dyscrasia or drug effect.

Nosebleeds usually only occur from ONE side of the nasal cavity, and usually from only ONE site. More than 90% of cases are due to bleeding from an anterior location: Kiesselbach's plexus, the septal roof, or a lower or middle turbinate. These sites may be easily visualized. Only 10% or fewer epistaxis cases will occur from a posterior, nonvisualized site. Always examine the patient in an upright position; the patient should tilt the head forward to facilitate any bloody drainage *outward* into a waiting basin, rather than tilting the head backward and having the blood drain down the pharynx.

What You Need

Headlight

Nasal speculum

Suction equipment, with large bore catheter (i.e., Yankauer)

Silver nitrate applicators

Gauze: 4 × 4s

Cotton pledgets

4% cocaine topical solution

1/1,000 adrenaline topical solution (Neo-Syneprine will also do)

27-gauge needle and 3-cc syringe

1 or 2 bayonet forceps

Vaseline gauze packing strip

Surgicel- or Avitene-type dressing

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For Additional Management of a Posterior Bleed:

Epistat balloon catheter (or equivalent)

No. 14 Foley catheter

0.0 or 1.0 heavy silk ties

Magill forceps

Sterile saline, 30-mL syringe, sterile lubricant

An assistant is VERY helpful

Clinical Technique

1. Obtain history; brief general physical exam to include vital signs, skin, neck, and oral exam.
2. Place patient into chair, sitting upright, with slight forward tilt. Have patient or assistant hold a basin to catch any bloody drainage.
3. Using headlight and nasal speculum (open vertically, so as not to compress septum), perform anterior rhinoscopy. Suction well, clear all clotted blood.

Bleeding Visualized; Anterior Bleeding:

4. Soak cotton pledget with 4% cocaine, 1/1,000 adrenaline topical solution, or Neo-Syneprine. This will act to constrict blood vessels and shrink the nasal mucosa, giving an excellent view of the bleeding area while decreasing the hemorrhage. Leave pledget applied for 5 to 10 minutes before removal.
5. Remove pledget. Take two silver nitrate sticks and hold their tips together. Apply the tips gently to the bleeding area to form a gray eschar; apply for 15 to 30 seconds only, and remove. Bleeding should stop.
6. Pack BOTH sides of nose with Vaseline packing strip as in Fig. 6.1. Note how one end of the gauze is left out of the nose to provide a layering effect of the pack.



FIG. 6.1. Placing an anterior nasal pack.

If Bleeding Is Not Controlled:

7. Resuction nose and reapply cocaine/adrenaline pledget for 5 to 10 minutes.

If Still Bleeding After Pledget Removed:

8. Inject 1 or 2 mL of 1% lidocaine solution with epinephrine under the site of the bleed. This will tamponade and vasoconstrict.
9. Place small piece of folded Surgicel or Avitene against the bleed site with bayonet forceps. These materials work on contact with blood to form an absorbable clot.
10. Pack over the absorbable clot material with Vaseline gauze, packing BOTH sides of the nose.

Still Bleeding:

11. Place Vaseline packing over fresh patches of Surgicel or Avitene, packing BOTH sides of the nose.
12. Apply direct compressive pressure with fingers.
13. *Think of secondary causes of epistaxis: blood dyscrasias, drugs, etc.*
14. Obtain urgent ENT consultation.

PRACTICAL TIPS

- Always suction nose free of clots. Clots will prevent vessels from constricting, and may prolong bleeding.
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- Don't apply the silver nitrate sticks too hard. Vigorous pressure will actually cause the silver nitrate to burn through the mucosa and damage the underlying nasal cartilage.
 - Packing should be removed in 48 hours by primary physician or by ENT consultant. Absorbable clotting material will fall out at this time.
 - As the anterior packing will occlude sinus drainage, we recommend prophylactic antibiotic coverage. Choices include sulpha-trimethoprim, one DS tablet bid; amoxicillin-clavulanic acid, 400 to 850 mg po bid; cephalexin, 500 mg po tid; or erythromycin, 500 mg po qid, all for 7 to 10 days.
 - After the packing is removed, have the patient use saline nasal drops every 2 to 4 hours while awake for a week or so. This serves to provide gentle hydration

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and cleansing to the nasal mucosa.

- Instruct the patient to avoid blowing the nose for 48 hours. If the patient has to sneeze, instruct him or her to sneeze through the mouth.

A Word About Merocel and Other Self-Expanding Packings:

Merocel and other self-expanding packings may be useful adjuncts to controlling epistaxis. They are very useful for packing a bleeding site located slightly posterior to Kiesselbach's plexus. The trick to using Merocel is accurate placement *after adequate vasoconstriction of the affected nostril*.

The technique is as follows:

1. Adequately vasoconstrict the nasal mucosa of the affected nostril by placing a pledget soaked with 1/1,000 epinephrine or Neo-Synephrine solution. Leave this in place for 5 minutes and remove. Remove Merocel packing from package. Lubricate well with surgical jelly or Polysporin or similar antibiotic jelly. Hold the Merocel in a vertical plane with a forceps and pass it beside the septum, underneath the inferior turbinate, until the distal tip of the packing touches the nasopharynx. You will notice that you are quite deep into the nostril. Now pull the Merocel pack 5 mm anteriorly. Inflate the pack by dripping water onto it or inject some water directly into the pack with a syringe and fine-gauge needle. Observe expansion of the pack. If the pack has difficulty passing in the nostril, you can trim an edge of the packing, *but do not cut the pack short!* The length of the Merocel packing is critical to the success of the procedure.
2. Pack the anterior nostril in front of the Merocel with Vaseline gauze as described earlier, and give a prescription for an appropriate antibiotic.
3. Remove the packing in 48 hours by grasping it with a hemostat and pulling it out.

Bleeding not Visualized, Probable Posterior Nasal Bleed

A certain number of patients presenting with epistaxis will have their bleeding site located significantly posterior to Kiesselbach's plexus. The bleeding site will not be visualized; the clinical clue is, however, the persistence of hemorrhage, with most of it rolling down the posterior pharynx. Posterior epistaxis usually requires ENT consultation. Two simple techniques follow to help tamponade the bleeding while arranging consultation.

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Clinical Technique

Placement of Bilateral Posterior Nasal Packs:

1. Have patient sit upright in chair. Position a basin close to the patient. Posterior bleeds tend to be profuse, and the patient will be expectorating large amounts of fresh and clotted blood. Assess vital signs frequently and consider basic lab investigations, including CBC, PT/INR, PTT, and group and screen.
2. Suction nose frequently. Assign assistant to perform this duty.
3. Fold two or three 4 × 4 gauzes into rolls, and tie them securely with a heavy silk tie, leaving two long ends. Prepare two rolls (Fig. 6.2).

FIG. 6.2. Preparing a gauze roll for use as a posterior nasal pack.

4. Pass Foley catheter down nostril until the end appears visible in the pharynx. Grasp the end of the Foley with the Magill forceps and pull out of the mouth.
5. Loop one end of the long silk tie through the “eye” of the Foley catheter; pull Foley back out through the nose (Fig. 6.3).

FIG. 6.3. Placing a posterior nasal pack.

6. Apply gentle traction on the silk tie running out of the nose. With your other hand, guide the gauze roll into the mouth, and up and behind the soft palate, into the posterior nasopharynx (Fig. 6.3). Repeat steps 4 to 6 for other nostril.
7. Have assistant maintain traction on silk ties from nostrils while you place bilateral anterior packs with Vaseline gauze.
8. Prepare another roll of gauze, and place it in front of the columella. Tie the nasal ends of the silk ties over this gauze roll “buttress.” You can tape the oral ends of the silk ties to the patient's cheek.
9. Obtain ENT consultation; provide appropriate antibiotic coverage.

Using the Epistat or Similar Inflatable Nasal Catheter:

Inflatable catheters are very useful and convenient to treat posterior nasal bleeds. The advantages of these devices include their ease of insertion, and their central patent “canal,” which helps to maintain a patent nasal air passage!

Clinical Technique

1. Position patient, and suction nostril. You may place a pledget soaked with 4% cocaine or Neo-Synephrine in the nostril as you are preparing the catheter.

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2. Remove the catheter from the package. The anterior balloon is inflated via the GREEN valve, while the posterior balloon is inflated via the WHITE valve. Use sterile saline and 30 mL syringe to test inflate/deflate balloons.
3. Lubricate the catheter and insert it into the nostril, leaving 1 to 2 cm of the catheter free.

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4. Inflate POSTERIOR balloon using WHITE valve first with 5 to 10 mL of saline. Suction anterior nostril and gently pull the catheter forward to seat the posterior balloon firmly into the posterior nasal area. Next, inflate ANTERIOR balloon using GREEN valve with 10 to 25 mL of saline.
5. Repeat the preceding steps for opposite nostril if bleeding persists; if you think the posterior bleed was unilateral and the bleeding is controlled, unilateral packing may be sufficient.
6. Place the patient on appropriate antibiotics and obtain urgent ENT consultation.

PRACTICAL TIPS

- Posterior bleeds tend to be profuse. We recommend a basic laboratory workup to include a CBC, electrolytes, BUN, creatinine, PT/INR, and PTT. Intravenous resuscitation may be required with appropriate crystalloid solution or even blood products.
- Patients with a posterior bleed will swallow large amounts of blood. Expect regurgitation of this blood and possible increases in blood urea nitrogen (BUN). Also expect a finding of occult blood in the stool, as this old blood works its way through the GI tract.
- Inflatable catheters are easier to place than a posterior pack; if you have them, use them. Most consultants would recommend admitting a patient with an inflatable balloon catheter in place.
- Obtain ENT consultation for these bleeds; and ensure antibiotic coverage is provided.
- IT IS WISE TO ADMIT ALL POSTERIOR NASAL BLEEDS TO THE HOSPITAL FOR OBSERVATION.

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