TITLE OF CASE

Epistaxis

AUTHORS OF CASE Please indicate corresponding author by *

Yunyna QU*

SUMMARY Up to 150 words summarising the case presentation and outcome

An 8-year-old boy presents to the clinic with right-sided epistaxis that happened two hours before. His parents estimate nosebleed having last approximately 30 min and report that the patient started bleeding nose 2 months ago, almost 1-2 times/day. Every time it last 5-30 minutes, no history of nasal obstruction, trauma, bleeding diathesis, or easy bruising. He has a history of Asthma. Medications include albutoral as needed. Physical examination shows warm and dry skin without scaling. No rashes or lesions. Nose: Septum midline. No discharge. A 0.3cm linear lesion in right nasal septum wall. Treatment: 1) Education: Avoid dryness in the home; 2) Stopping nose bleeding: Proper body position, body leaned forward and head elevated. Initial treatment begins with direct pressure by squeezing the nostrils together for 5-30 minutes straight, without frequent peeking to see if the bleeding is controlled. Patient and his parents complied with the above suggestions, no nosebleed after last visit.

BACKGROUND Why you think this case is important – why you decided to write it up

Epistaxis continues to be one of the most common causes of emergency department visits. Epistaxis is estimated to occur in 60% of persons worldwide during their lifetime, and approximately 6% of those with nosebleeds seek medical treatment. The cause of epistaxis varies, and possible causes include trauma to the nasal lining, inflammatory conditions, bleeding disorders, vascular malformations, and tumors. It may occur in patients of any age group. The prevalence is increased for children less than 10 years of age and then rises again after the age of 35 years. Therefore the cause must be determined for proper diagnosis and treatment. Anterior epistaxis is more common in the child or young adult, whereas posterior nasal bleeding is more often seen in the older adult with hypertension or arteriosclerosis. More than 90% of episodes of epistaxis occur along the anterior nasal septum at a site called Kiesselbach’s area. Its vascular supply moves from the external carotid artery through the superior labial branch of the facial artery and the terminal branches of the sphenopalatine artery and from the internal carotid artery through the anterior and posterior ethmoidal arteries. Approximately 10% of nosebleeds occur posteriorly, along the nasal septum or lateral nasal wall.

Initial management includes compression of the nostrils (application of direct pressure to the septal area) and plugging of the affected nostril with gauze or cotton that has been soaked in a topical decongestant. Direct pressure Nasal packing remains the cornerstone of treatment for epistaxis occurring in an emergency setting. Usually, petroleum jelly– or antibiotic-soaked gauzes are used for this purpose. Foley catheter balloons are also used mainly for posterior nasal bleeding when classic posterior nasal packing methods are not appropriate. Electrocautery is good for persistent epistaxis, but it may damage surrounding normal tissue.

Epistaxis is a very common medical condition. According to the literatures, 90% of epistaxis cases are anterior epistaxis. This is an easy medical condition that can be handled by the patients themselves or the parents of child patients. However, many patients show up in ER with scary bloody faces and hands seeking medical aids. Except those with rare tumors or obvious signs of trauma, hematology disease, most cases can be treated with nose pressure within 10 min. The main reason for such cases is either the doctors do not provide enough information or proper education to the patients or the patients do not know the basic knowledge and follow doctors’ direction to stop the bleeding. For the frequent re-occurring cases, the most common reason is the causes of epistaxis are not eliminated or prevented properly. It is necessary to emphasize the importance basic knowledge and education about epistaxis.

CASE PRESENTATION Presenting features, medical/social/family history

Patient Demographics:
- Boy
- DOB: 05/27/2000 (8yrs)
- Wt: 66 LB
Chief Complaint: Bleeding nose

Present Illness:
- Patient started bleeding nose 2 months ago, almost 1-2 times/day. Every time it lasts 5-30 minutes. Parents help him or let patient himself pinch the nose to stop bleeding. But some times the bleeding relapsed when stopped pinching nose. Patient never had fever, cough, sore throat and shortness of breath. No headache, dizziness, palpitation or fatigue. No petechia, purpura and ecchymosis or bruise on skin. No stomach pain, nausea, vomiting, diarrhea, blood in stool or bleeding during bowel movement. No pain, urgency, burning or bleeding during urinate.

Past Medical History: Asthma.
Past Surgical History: None.
Family History: None.
Allergies History: NKDA.
Medicine Taking: Albutoral as needed.

Social History:
- Patient lives in Ann Arbor, MI with his parents and sister. He is a second grade elementary school student. Eat almost every food except sea food. So active and has many friends. His grade scores are excellent.

INVESTIGATIONS If relevant

Review of Systems:
- General: Well nutritional and pleasant boy, no apparent distress. Skin dryness and itching need a lot lotion.
- Neuro/Mental: Denies H/A, moodiness, anxiety, muscle weakness.
- HEENT: Denies visual changes, ear ache, sore throat but rhinorrea and epistaxis.
- Cardio: No palpitations, but no chest pain and dizziness.
- Respiratory: Denies SOB, wheezing or cough.
- GI: Denies N/V, diarrhea, constipation, stomach pain.
- GU: No history of infection. Denies frequency, dysuria, bleeding urine. Color of urine is yellow.
- Endocrine: Denies hair loss, cold intolerance, or texture changes.
- Musculoskeletal: No concern.
- Neurological: No concern.
- Mental: No concern.

Physical Exam
- General: Patient is alert and oriented.
- Vital Signs:
  - Temperature: 98.4 degrees Fahrenheit.
  - Pulse: 90
  - Respiration: 18/min.
  - Blood pressure: 95/60 rt arm sitting.
  - Pulse Oximetry: 99%
  - Height: 127cm.
  - Weight: 66LB.
- Skin: warm, dry without scaling. No rashes or lesions. No petechia, purpura and ecchymosis or bruise on skin.
- Eyes: PERRLA, EOMI, sclera white, conjunctiva clear.
- Ears: TM show scarring bilaterally. No injection or retraction.
- Nose: Septum midline. No discharge. A 0.3cm linear lesion at right nasal septum wall.
- Throat: Teeth normal, pharynx not injected, tonsils no enlargement, uvula midline.
- Neck: appears thick, without goiter. Trachea midline. Thyroid not enlarged. No lymphadenopathy.
- Chest and Lungs: (CTABL) no abnormal.
- Heart: HR: 90/min, regular S1 and S2. No murmur, gallop and thrill.
- Abdomen: Plat, non-tender. Normal Active Bowel sounds x4 quadrants. No organomegally.
- Extremities: Equal in size and strength bilaterally.

Laboratory
- CBC: normal.
- Bleeding Time: normal.
- PT and PTT: normal.
- SGOT and SGPT: normal.
- BUN and Creatinine: Normal.
Diagnosis: Recurrent Nosebleed: Anterior epistaxis (R)

With recurrent nosebleeds, it is important to identify the cause and rectify the condition, if possible. Common causes of nosebleeds include upper respiratory infections, disorders of blood coagulation, tumors of the nasal cavity, and a condition called hereditary hemorrhagic telangiectasia (HHT). Recurrent nosebleeds in teenagers could also be due to a nasopharyngeal angiofibroma (head and neck tumor). Patients with recurrent nosebleeds should receive a complete examination of the nasal cavity along with radiological and hematologic exams. Frequent causes of nosebleeds are listed in Table 1.

Understanding the causes of nosebleeds will help pharmacists recommend appropriate pharmacotherapy and provide accurate patient counseling to their patients.

### Table 1.

<table>
<thead>
<tr>
<th>Local factors</th>
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<td>Examples</td>
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<td>Weber-Rendu Syndrome</td>
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<td>Blunt trauma</td>
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<td>Sharp blow to the face</td>
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<td>Fingers during nose-picking</td>
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<td>Inflammatory reaction</td>
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<td>chronic sinusitis</td>
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<td>Low relative humidity of inhaled air</td>
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<td>Nasal prong O₂</td>
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<td>Nasal sprays</td>
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<td>Vitamin C or Vitamin K</td>
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*Trauma/Mucosal laceration* (directly or indirectly), which can be life-threatening in some cases. Inflammation: Common causes include upper respiratory infections, sinusitis, allergy, medications (such as cocaine, prescription nasal sprays), and chemicals. Nosebleeds can also occur from forceful nose blowing. **Environmental Factors:** (Nasal Mucosal Drying) Dry, cold air can lead to nosebleed. Chronic oxygen use can lead to dry nasal membranes; these types of nosebleeds are usually easy to control. Smoking is a strong risk factor for nosebleeds. **Foreign Body Objects** such as beads, nuts, and batteries can lead to obstruction. Nosebleed with unilateral foul discharge is usually present. **Neoplasm:** Benign Tumors include nasopharyngeal angiofibroma, inverted papilloma, and hemangioma. Common Malignant Tumors include adenoid cystic carcinoma, melanoma, and squamous cell carcinoma. Symptoms often include intermittent nosebleeds, foul discharge, change in smell sensation, and nasal obstruction. **Aneurysm:** Uncommon neck and head/neck aneurysms can occur and often lead to hard-to-control intermittent profuse and life-threatening nosebleeds. **Cardiovascular Disease:** Arteriosclerosis and hypertension are common in the elderly and lead to posterior nosebleeds. **Systemic Factors:** Heavy alcohol use leads to prolonged bleeding time. **Blood dyscrasias,** such as thrombocytopenia, hereditary hemorrhagic telangiectasia (HHT), hemophilia, and von Willebrand’s disease, can lead to nosebleeds. Medications such as anticoagulants are also factors. Recurrent hard-to-control nosebleeds occur, and can be life-threatening. **Chronic renal failure** patients undergoing hemodialysis are at risk for persistent nosebleeds (The cause is unknown, though dysfunctional platelets and long-term LMWH use are both risk factors for nosebleeds.) Septal perforations also occur in 8% of these patients.
End-stage liver disease can also lead to blood dyscrasias and subsequent nosebleeds.

**TREATMENT If relevant**

1. **Education:** Avoid excessive dryness in the home (eg, from radiator heating), patients may benefit from the following care options:
   a. Humidify the air with a cool mist vaporizer in the bedroom.
   b. Alternately, a metal basin of water may be placed on top of a radiator to humidify the ambient air.
2. **Initial treatment begins with direct pressure by squeezing the nostrils together for 5-30 minutes straight, without frequent peeking to see if the bleeding is controlled. Usually only 5-10 minutes is required. If the bleeding has not stopped, reapply the pressure for up to two further periods of ten minutes.
3. **Patients should keep their heads elevated but not hyperextended because hyperextension may cause bleeding into the pharynx and possible aspiration. This maneuver works more than 90% of the time.**
4. Ask the person to pinch the end of their nose and continue to breathe through their mouth.
5. **Put a cold compress or ice pack on the bridge of nose.**
6. If bleeding continues, seek medical advice.

**After the Nose Bleed**

1. Do not clean out the inside of your nose after the bleeding has stopped - this can dislodge clots and start the bleeding again.
2. Clean up everything else.
3. Turn on a cool vaporizer to moisten mucus membranes, which will help prevent the nosebleed from recurring.
4. Apply petroleum jelly to the inside of the lower nostril. This gives protection with moisture to the inside of the nose.
5. Avoid doing anything to cause your nose to bleed. Don’t blow your nose, pick your nose, bump it, or bend over.

**OUTCOME AND FOLLOW-UP**

Patient and his parents complied with the above suggestions, no nosebleed after last time visit.

**DISCUSSION including very brief review of similar published cases (how many similar cases have been published?)**

Epistaxis is a common problem in children, affecting 30 percent of children 0 to 5 years old, 56 percent of children 6 to 10 years old and 64 percent of children 11 to 15 years old. Most bleeds are minor and self-limiting and no medical attention is sought. Most commonly, the bleeding comes from the anterior septum, and crusting, vestibulitis, and digital trauma have been suggested as causative factors. Underlying bleeding disorders may also cause epistaxis and previous studies have shown that 5 percent to 10 percent of children with recurrent epistaxis may have mild von Willebrand's disease. Management of epistaxis in any age group dictates that the patient be resuscitated first. In children, simply pinching the nostrils is the most commonly used method to stop bleeding from the caudal end of the septum. Sometimes the bleeding persists, and additional measures such as cauterization and nasal packing are needed.

For most patients presenting with epistaxis, there is a response to conservative treatment consisting of patient-applied pressure to the anterior septum for 15 minutes, topical vasoconstrictors, and topical ointments for moisturizing. Although few randomized trials have been conducted to evaluate and compare various treatment strategies, cases that do not respond to conservative approaches usually do respond to cautery or packing with a variety of absorbable hemostatic materials. Severe cases may require posterior packing, surgical intervention, or embolization. If epistaxis recurs in the cases using anticoagulant medicines, discontinuation of medicines should be considered. Repeated episodes, particularly if they were unilateral or accompanied by other nasal symptoms, would warrant radiographic and endoscopic evaluation to rule out neoplastic processes.

There are no formal professional guidelines concerning epistaxis. However, recommendations for management provided by the American Academy of Otolaryngology — Head and Neck Surgery (www.entnet.org/HealthInformation/Nosebleeds.cfm) are recommended.

**LEARNING POINTS/TAKE HOME MESSAGES 3 to 5 bullet points**

1. **Education:** Avoid excessive dryness in the home (eg, from radiator heating), patients may benefit from the following care options:
   a. Humidify the air with a cool mist vaporizer in the bedroom.
   b. Alternately, a metal basin of water may be placed on top of a radiator to humidify the ambient air.
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4. Ask the person to pinch the end of their nose and continue to breathe through their mouth.

5. If bleeding continues, seek medical advice.

6. After the Nose Bleed
   1) Do not clean out the inside of your nose after the bleeding has stopped - this can dislodge clots and start the bleeding again.
   2) Clean up everything else.
   3) Turn on a cool vaporizer to moisten mucus membranes, which will help prevent the nosebleed from recurring.
   4) Apply Vaseline/petroleum jelly to the inside of the lower nostril. This gives protection with moisture to the inside of the nose.
   5) Avoid doing anything to cause your nose to bleed. Don't blow your nose, pick your nose, bump it, or bend over.

REFERENCES


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April 28, 2009

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