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Anterior Epistaxis in a Patient with a History of Allergic Rhinitis: A Case Report

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Abstract
Introduction: *Epistaxis or nosebleed is one of the emergency conditions in the field of otorhinolaryngology that is often encountered, especially anterior epistaxis. Allergic rhinitis can be a predisposing factor for epistaxis due to chronic inflammation of the nasal mucosa that causes fragility of blood vessels in the Kiesselbach plexus area.* ***Objective:*** *To report a case of anterior epistaxis in a patient with a history of allergic rhinitis, and to evaluate the appropriateness of the diagnosis and management based on existing theories and literature.* ***Methods:*** *This writing is a descriptive case report of a patient who came with complaints of nosebleeds. Anamnesis, physical examination, and supporting examinations were performed to confirm the diagnosis and formulate management.* ***Results and Discussion:*** *The patient was diagnosed with anterior epistaxis triggered by the underlying condition of allergic rhinitis. Therapy given was in the form of local treatment (cauterization) and antihistamine medication to control allergic symptoms. The evaluation results showed significant clinical improvement without recurrence.* ***Conclusion:*** *Anterior epistaxis can occur as a complication of chronic allergic rhinitis. The diagnosis established through anamnesis, physical examination, and supporting tests is consistent with the theory outlined in the literature review. Appropriate treatment of underlying causes, such as allergic rhinitis, is crucial to prevent recurrence.*

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Introduction

One of the Ear, Nose, and Throat (ENT) emergencies that is frequently encountered and common in primary health care clinics or emergency units is nosebleeds or epistaxis (Alotaibi, 2025). Epistaxis is divided into anterior (the most common nosebleed) and posterior. Posterior nosebleeds are less common, but usually require medical attention. Anterior nosebleeds originate from the Kiesselbach plexus in the anterior nasal septum area and account for about 90% of cases. There are branches of blood vessels that supply the nasal cavity such as the anterior ethmoid artery, posterior ethmoid artery, sphenoid artery, greater palatine artery, and superior labial artery. At the entrance to the nasal cavity there are blood vessels and if it experiences changes in hot air and extreme cold air it can easily become traumatized. This is what makes the septal mucosa fragile and easily traumatized, thus causing epistaxis. Posterior epistaxis is rare and originates from posterior blood vessels. Posterior epistaxis usually occurs in patients with coagulation disorders, hypertension, and vascular disorders blood (Alotaibi, 2025).

The prevalence of epistaxis in the general population is 60% and over a lifetime and is responsible for more than 1.7/100,000 visits to the Emergency Department (ED) of those 60% who experience epistaxis, a physician will treat 10%. (Sowerby, Rajakumar, Davis, & Rotenberg, 2021). It is more common in males than females and in those aged <10 years (Anterior epistaxis caused by nose picking) & between 70-79 years (especially posterior epistaxis).(Tunkel et al., 2020). Although most nosebleeds are of limited severity and duration, approximately 6% of people who experience nosebleeds will seek medical attention. This is severe, persistent, and/or recurrent bleeding, and bleeding that impacts the patient's quality of life. Interventions for nosebleeds range from self-treatment and home remedies to more intensive procedural interventions in medical offices, emergency departments, hospitals, and operating rooms. 3 Epistaxis has been estimated to account for 0.5% of all emergency department visits. and up to one-third of all emergency department visits are ENT-related. Hospitalization for aggressive treatment of severe nosebleeds is reported in 6% of patients admitted to the emergency department for nosebleeds (Tunkel et al., 2020).

Basic first aid measures for epistaxis need to be known by everyone working in the ED and the public involved in community-based care.2 When performed correctly, simple and effective first aid procedures can stop an active nosebleed in the majority of cases in the ED. Many myths circulate in the community about first aid for epistaxis. The most common misconception involves tilting the head back and applying pressure to the nasal bone or nasal cavity. Although this misconception may be common among the general public, it is important for healthcare providers to disseminate epistaxis care to the community. First aid management of epistaxis is described in Otolaryngology (Oto-HNS), EM, and Family Medicine texts and journal articles but is also part of basic life support courses. (Sowerby et al., 2021). The purpose of this paper is to discuss a case found in the ENT Polyclinic of Pelabuhan Hospital Jakarta.

Method

This study used a single case study design, where all data were obtained from a single patient who received direct care at a healthcare facility. The design used was a retrospective observational case study, where data were collected from medical records and clinical evaluations of patients who had received care at the healthcare facility. This study was not experimental in nature, but rather documentary and reflective in nature. The subject of this study was a patient who visited the ENT Polyclinic at Pelabuhan

Hospital Jakarta with a primary complaint of nosebleeds (epistaxis). Subjects were selected using purposive sampling, with patients meeting the clinical criteria for a diagnosis of anterior epistaxis and presenting with a history and symptoms of allergic rhinitis. The diagnosis is based on clinical findings from the history, physical examination, and supporting tests. Patients are managed according to established medical protocols, including local cauterization and antihistamines to address the symptoms of allergic rhinitis. Data were analyzed descriptively and qualitatively and compared with relevant theories and research findings in the literature review. Evaluations were conducted to assess the alignment of the clinical conclusions with standard theoretical and clinical practice guidelines.

Result and Discussion

1. Result

A 7-year-old 4-month-old female patient came with her mother to the ENT Polyclinic health service unit of the Jakarta Harbor Hospital. with complaints of bleeding from the left nose since several hours before the hospital and frequent sneezing in the morning. These complaints are not every day. The patient came to the ENT Polyclinic of the Jakarta Harbor Hospital with complaints of bleeding from the left nose since several hours before the hospital. Complaints were felt to arise in the morning towards noon after the patient picked her nose. 7 days ago, the patient experienced similar complaints due to picking her nose, because it had happened twice in 1 week, the patient's mother decided to seek treatment from an ENT doctor. Fever was denied, facial pain was denied, complaints in the ear were denied, complaints in the throat were denied, food allergies were denied, but the patient had a history of dust allergies.

A history of severe trauma was denied, a history of heart disease was denied, a history of blood disorders was denied. The patient has other complaints in the form of sneezing since 7 days ago. The patient felt that sneezing came and went, occurring mainly in the morning, and less than 4 days a week, and he was still able to carry out activities at elementary school. His sleep was not disturbed, and he was still able to play with his friends. The sneezing was preceded by an itchy nose and then a clear, odorless, bloodless, and watery nasal discharge that soaked several tissues. It was sometimes accompanied by tears and itchy, watery eyes. Due to the itchy nose, the patient would pick at the nose until it bled. Further history-taking revealed a history of morning sneezing, nasal congestion, and itching in the nose and eyes, especially during cold weather or exposure to dust, leading to a diagnosis of allergic rhinitis. A physical examination revealed a source of bleeding from the Kiesselbach plexus in the left anterior nasal septum. There were no signs of posterior bleeding or other structural nasal abnormalities. Blood pressure, body temperature, and other vital signs were within normal limits. Routine blood tests showed no abnormalities. The patient was diagnosed with anterior epistaxis triggered by fragile nasal mucosa due to chronic allergic rhinitis. Management included silver nitrate cauterization of the source of bleeding and oral antihistamines (loratadine once daily) to control allergic symptoms. In addition, patients are given education to avoid allergy triggers and maintain air humidity.

After two follow-up visits within two weeks, the patient experienced no recurrence and showed improvement in allergic rhinitis symptoms. A nasoendoscopy was performed as a supporting examination, with the results shown in Figure 1 below.

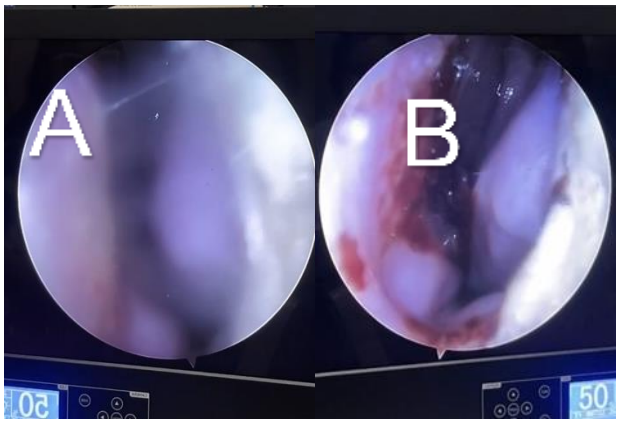

Figure 1. Nasoendoscopy image shows that there is blood in the left nasal cavity (B), while in the right nasal cavity (A) it appears within normal limits. Both mucosae appear livid

Management

The principles of epistaxis management are to improve the general condition, identify the source of bleeding, stop the bleeding, and identify the causative factors to prevent recurrence.

Medication Management

- Cetirizine 10 mg x 1

Non-Medication Management

- Nasal lavage with 0.9% NaCl
- Press the external nostril for 10-15 minutes while tilting the chin down
- Avoid picking your nose
- Avoid exposure to allergens; if you are allergic to cold, wear warm clothing, or if you are allergic to dust, frequently clean the sofa or mattress
- Do not sleep with a fan on

Prognosis

- Ad Vitam: Bonam
- Ad Functionam: Bonam
- Ad Sanationam: Bonam

The overall case analysis is as described in the following table 1.

Table 1
Case Analysis

No	Cases	Theory
1	An.NA, aged 7 years 4 months, complained of bleeding from the left nostril and often sneezed.	A recent study of emergency department databases in four states showed that children presenting with epistaxis had a mean age of 7.5 years. The prevalence of self-reported AR is estimated to be between 2% and 25% in children.
2	Complaints of bleeding from the left nostril for several hours before the hospital visit. The complaint arose in the morning, approaching noon, after the patient had been picking his nose. Seven days earlier, the patient had experienced similar complaints due to nose picking.	A typical symptom of allergic rhinitis is repeated sneezing attacks. Sneezing is actually a normal symptom, especially in the morning or when exposed to large amounts of dust. Furthermore, patients with AR often rub their nose upward (an allergic salute) or pick their nose. (Soepardi & Iskandar, 2001). Nose picking is one etiology of anterior epistaxis because most nosebleeds are caused by minor trauma to the anterior nasal septum (Kasuba & Ramli, 2019)
3	Fever was denied, facial pain was denied, ear complaints were denied, history of sore throat was denied, food allergies were absent, but the patient had a history of dust allergies. History of severe trauma was denied, history of heart disease was denied, history of blood disorders was denied.	The causes of allergic rhinitis can vary depending on the classification. Some patients are sensitive to multiple allergens. Allergens that cause seasonal allergic rhinitis are usually pollen or mold. Perennial (year-round) allergic rhinitis includes dust mites, of which there are two main species: Dermatophagoides farinae and Dermatophagoides pteronyssinus; mold; and pets such as cockroaches and rodents (J Bousquet et al., 2008) Etiology of Epistaxis: History of severe trauma; History of heart disease; History of blood disorders (Alotaibi, 2025; Womack, Kropa, & Stabile, 2018)
4	The patient had another complaint in the form of sneezing since 7 days ago.	A typical symptom of allergic rhinitis is repeated sneezing attacks. In fact, sneezing is a normal symptom, especially in the morning or when there is contact with large amounts of dust (Soepardi & Iskandar, 2001)
5	The patient felt that sneezing came and went, occurring mainly in the morning, and less than 4 days a week, and was still able to carry out activities at elementary school.	The frequency of symptoms has been divided by some into intermittent (<4 days/week or <4 consecutive weeks/year) and persistent (>4 days/week and >4 consecutive weeks/year). Based on the severity of symptoms, they are classified as mild (does not interfere with activities) and moderate-severe (disrupts activities) (Brożek et al., 2017; Dykewicz et al., 2020).
6	Sneezing is preceded by an itchy nose and then runny snot comes out of the nose which is clear, odorless, not accompanied by blood, and wets several strands of tissue, sometimes accompanied by tears and the eyes feel itchy and watery.	Typical symptoms of allergic rhinitis are repeated sneezing attacks, rhinorrhea, tears, allergic salute, itchy nose.
7	Due to the complaint of an itchy nose, the patient picked his nose until it bled.	Nose picking is one of the etiologies of anterior epistaxis because most nosebleeds are caused by minor trauma to the anterior nasal septum
8	Seven days ago, the patient complained of bleeding from the left nostril due to the same cause. The patient has a history of dust allergies.	A typical symptom of allergic rhinitis is repeated sneezing attacks. Sneezing is actually a normal symptom, especially in the morning or when exposed to large amounts of dust. Furthermore, patients with

		AR often rub their nose upward (an allergic salute) or pick their nose. Nose picking is one etiology of anterior epistaxis because most nosebleeds are caused by minor trauma to the anterior nasal septum.
9	The patient has a habit of picking his nose and doing activities outside the house or in dusty environments.	Nose picking is one of the etiologies of anterior epistaxis because most nosebleeds are caused by minor trauma to the anterior nasal septum. The causes of allergic rhinitis can vary depending on the classification. Some patients are sensitive to multiple allergens. Allergens that cause seasonal allergic rhinitis are usually pollen or mold. Perennial (year-round) allergic rhinitis includes dust mites (of which there are two main species: Dermatophagoides farinae and Dermatophagoides pteronyssinus), mold, pets such as cockroaches, and rodents.
10	Blood pressure: 100/75 mmHg Pulse: 88 beats/minute Respiratory rate: 20 beats/minute Temperature: 36.7°C	Hypertension is one of the etiologies of epistaxis.
11	The color of the inferior conchae is clear bilaterally, in the middle and inferior meatus there is secretion in the right nasal cavity, and there is blood on the septum in the left nasal cavity.	A rhinoscopy examination reveals a moist, pale, or livid nasal mucosa with edematous turbinates and copious, watery discharge. A nasoendoscopy is performed to directly evaluate the nasal cavity and sinus openings using high-quality imaging. This is a common procedure in ENT and KL departments and serves as an objective diagnostic tool for evaluating the nasal mucosa, sinonasal anatomy, and nasal pathology.
12	Diagnosis: Anterior Epistaxis and Allergic Rhinitis DD: Posterior Epistaxis, Viral Infectious Rhinitis, Vasomotor Rhinitis	Differential diagnosis of epistaxis can be suspected that there is a nasal tumor, DIC, Hemophilia, Von Willebrand disease, Rhinitis, Foreign body in the nose Drug toxicity (Warfarin, NSAIDs), or posterior or anterior epistaxis (TR & Hadi, 2019).
13	Management: - Cetirizine 10 mg x 1 - Nasal lavage with 0.9% NaCl - If the condition recurs, press the patient's nose against the outer nostril for 10-15 minutes while tilting the chin down. - Avoid picking your nose. - Avoid exposure to allergens. If you are allergic to cold, wear warm clothing, or if you are allergic to dust, clean the sofa or mattress frequently. - Do not sleep with a fan on.	Epistaxis has three principles in managing epistaxis: stopping bleeding, preventing complications, and preventing recurrence. Begin with a primary survey and airway management, ensuring a patent airway. (Jean Bousquet et al., 2020) Ask the patient to apply constant direct pressure by pinching the nose above the cartilage tip (not over the bony area) for several minutes to try to control the bleeding. 7 Apply direct pressure to the left and right nasal ala simultaneously for 10-15 minutes. Evaluate every 5-10 minutes whether the bleeding has been controlled. The patient should remain upright but not hyperextended to prevent blood from flowing into the pharynx, which can lead to aspiration. 6 If this is ineffective, vasoconstrictors such as oxymetazoline or thrombogenic foam or gel can be used. (Rosenfield, Keith, Quirt, Small, & Ellis, 2024) For allergic rhinitis, according to the WHO, mild intermittent rhinitis can be managed with oral/topical antitussives or antitussives plus oral decongestants and avoid allergen exposure. (Rosenfield et al., 2024)

2. Discussion

Epistaxis is spontaneous bleeding from the nasal cavity, which can be divided into anterior and posterior (Thiagarajan, 2013). Approximately 90% of epistaxis cases originate from the Kiesselbach plexus, a network of superficial blood vessels in the anterior part of the nasal septum, making it the most common location for anterior epistaxis. Risk factors for epistaxis include local trauma, dry air, hypertension, upper respiratory tract infections, and inflammatory conditions such as allergic rhinitis (Aziza, Dermawan, & Dewi, 2016). In this case, the patient presented with anterior epistaxis without a history of trauma or hypertension, but with a history of consistent allergic rhinitis symptoms. Allergic rhinitis causes chronic inflammation of the nasal mucosa, increased local vascularization, and hypersensitivity, which can weaken blood vessel integrity and trigger bleeding, especially in dry air conditions such as exposure to air conditioning (Bjermer, Westman, Holmström, & Wickman, 2019). Management of anterior epistaxis generally begins with conservative measures such as cold compresses and nasal compression. If bleeding recurs or persists, chemical or electrical cauterization of the bleeding site is performed. In this case, cauterization with silver nitrate is effective in stopping the bleeding (Rosenfield et al., 2024). This approach is in accordance with guidelines for the management of anterior epistaxis which recommend cauterization as a second-line intervention after manual compression fails (Tabassom & Dahlstrom, 2023). Management of comorbidities such as allergic rhinitis is crucial in preventing relapse. Antihistamine therapy, allergen avoidance, and patient education are essential components of long-term management ("Ent Update: Publikasi Ilmiah Program Studi THT-KL FK Udayana | PDF | Sains & Matematika," 2025). In this case, control of rhinitis symptoms with loratadine and environmental modifications demonstrated satisfactory clinical results. Therefore, the diagnosis and management of this case are consistent with the theory and literature reviewed in the literature review. The combination of local therapy for epistaxis and systemic therapy for allergic rhinitis provided good results and prevented relapse.

Conclusion

Based on the results of the anamnesis, physical examination, and supporting examinations in this case report, the patient's primary diagnosis was Anterior Epistaxis followed by Allergic Rhinitis. Based on the case included in this case report, it is quite in accordance with the theory attached to the literature review.

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