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A RARE BUT IMPORTANT ENTITY: EPISTAXIS IN INFANTS

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□ **Abstract—Background: Epistaxis is a common emergency department (ED) complaint; however, this entity is rare among children younger than 2 years of age. In this age group, epistaxis may be a presenting sign of a bleeding disorder or nonaccidental trauma. Case Report: We present a case of a 2-month-old infant who was evaluated in the pediatric ED for epistaxis and discharged home. The infant returned 2 days later with facial swelling and irritability, and was found to have significant head trauma. In this article we review the epidemiology and differential diagnoses for epistaxis among infants, as well as the initial approach to the evaluation of this uncommon clinical entity in this age group. Why Should an Emergency Physician Be Aware of This?: Potential etiologies for epistaxis among infants and young children include severe systemic disease and nonaccidental trauma. Given its rarity and possible clinical significance, the approach to epistaxis differs in this age group. Emergency physicians should screen for and exclude a bleeding disorder while also having a very low threshold for a nonaccidental trauma evaluation.** © **2016 Elsevier Inc. All rights reserved.**

□ **Keywords—infant; epistaxis; nonaccidental trauma**

INTRODUCTION

Accounting for 1 in 200 emergency department (ED) visits in the United States, epistaxis is a common clinical problem that affects both the pediatric and adult populations (1). Although emergency physicians routinely provide care for patients with this complaint, epistaxis in children under 2 years of age warrants special consideration. Epistaxis is comparatively rare in this age group and its presence may herald a significant underlying etiology, including severe systemic disease or nonaccidental trauma (2). Thus, the evaluation and management of epistaxis in this age group is important to discuss.

We report the case of an infant initially evaluated for epistaxis who subsequently returned to the Pediatric Emergency Department (PED) with injuries concerning for nonaccidental trauma.

CASE REPORT

A 2-month-old African American girl was brought to the PED by her mother for evaluation of bleeding from the left naris. The bleeding had occurred earlier that day while the patient was being cared for by the maternal grandfather. There was no reported antecedent trauma. The naris was suctioned and the bleeding self resolved. Approximately 4 h after this incident, the mother resumed care of the infant and noted a small blood clot in the left naris without any active bleeding. The mother suctioned the blood clot and brought the infant to the PED for evaluation. A complete review of systems in the PED was negative. The infant was born at full term without any complications and had been hospitalized for influenza A at 1 month of age. The past medical and surgical histories were otherwise unremarkable. The infant had received her 2-month immunizations and did not take any

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medications. On examination the infant was alert and well appearing. Vital signs were as follows: weight 5.1 kg (39th percentile), temperature 37.3°C, heart rate 136 beats/min, and respiratory rate 36 breaths/min. A complete physical examination was unremarkable except for blood-tinged crusting noted in the left naris. Reassurance was provided and the infant was discharged home with instructions to the mother to use nasal saline drops and a humidifier.

The infant returned to the PED approximately 60 h after the initial visit with facial swelling and a change in behavior. Since discharge from the PED, the infant's mother reported decreased activity, increased sleepiness, and decreased oral intake associated with increased fussiness. The mother also noted that the infant preferred to be held still, as movement appeared to cause pain. Although the infant's behavior change had been present for approximately 2 days, it was just prior to the second PED visit that her mother noted tender facial swelling localized to the infant's forehead, with no known history of trauma. There were no further episodes of epistaxis or bleeding from other sites after the initial PED visit. A complete review of systems was otherwise negative. The infant resided with her mother, her maternal grandfather, and her maternal grandfather's girlfriend, along with three other children aged 1, 4, and 5 years. The mother was the primary caregiver; however, the other adults looked after the infant while the mother worked, and the infant had been cared for by the maternal grandfather's girlfriend the day prior to presentation.

On physical examination in the PED, vital signs were as follows: weight 5.1 kg, temperature 37.9°C, heart rate 146 beats/min, respiratory rate 38 breaths/min, and blood pressure 116/67 mm Hg. The infant was noted to be awake, but was irritable with movement and fell asleep easily in her mother's arms. She was not noted to be pale or icteric. The anterior fontanelle was tense and bulging with bogginess of the entire scalp. There was obvious associated facial and scalp swelling without any warmth. Examination of the heart and lungs was unremarkable and the abdomen was soft without masses or hepatosplenomegaly. There was no swelling or bruising noted elsewhere. The neurological examination was nonfocal. A noncontrast computed tomography scan of the brain demonstrated bilateral parietal bone fractures with a minimal depressed component in the right parietal region (Figure 1), diffuse bilateral scalp hematoma and edema, a small acute right frontal parietal subdural hematoma, and hemorrhagic contusions in the right parietal and left frontal lobes. Laboratory studies were notable for a hemoglobin level of 6.7 mg/dL with a hematocrit of 20.6%, a mean corpuscular volume of 87.3, and 6.7% reticulocytes. Platelets were elevated at 516 K/mm^3 and the white blood cell count was normal at

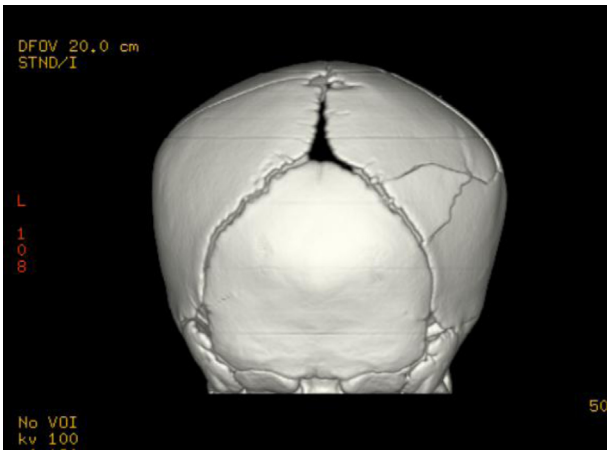

Figure 1. Three-dimensional volume-rendered computed tomography scan showing complex bilateral parietal fractures, more prominent on the right side.

17.1 K/mm^3. Electrolytes and alanine aminotransferase were within reference range, whereas the aspartate aminotransferase was mildly elevated at 62 U/L. A urinalysis was negative. Trauma surgery and neurosurgery evaluated the infant in the PED, and Child Protective Services was notified, with involvement of the social work department. The infant received a packed red blood cell transfusion in the PED and was admitted to the Neonatal Intensive Care Unit.

During admission, a skeletal survey demonstrated the skull fractures as detailed above with no other fractures noted. Her dilated eye examination was negative for retinal hemorrhages. A magnetic resonance imaging study of the brain performed on hospital day 3 showed a complex biparietal fracture with a right parietal and a left frontal hemorrhagic contusion, and a trace subdural hematoma along the right parietal convexity (Figure 2). The Child Protection Team felt that the extensive bilateral injuries suggested a mechanism of repeated impact, with nonaccidental trauma the most likely mechanism in the absence of a clear history of accidental injury. The infant had an uneventful 4-day hospital course and was discharged home in the care of her maternal aunt.

DISCUSSION

Epistaxis accounted for 450,000 visits to EDs in the United States over a 10-year period, with peaks in the pediatric and the geriatric age groups (1). Pediatric epistaxis occurs most often among children aged 3 to 8 years, with up to 60% of children experiencing one episode of epistaxis prior to age 10 years (3). Conversely, epistaxis among infants and young children under the age of 2 years is rare (2). For instance, in the general practice setting, epistaxis was noted in 15.9 cases per 10,000 children under 2 years of age (4). In the ED, however, the incidence