Case report

A healthy young girl crying out blood: A case report

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ABSTRACT

Background: Hemolacria is a rare condition that is characterized by the presence of blood in tears. It is a rare condition due to which insufficient literature and resources are present. Therefore, its prevalence and predilection for a specific gender, race, or age remain uncertain. Hemolacria is one of the most alarming symptoms in ophthalmology, associated with multiple underlying etiologies and diseases.

Case report: We report an unusual case of a 12-year-old female patient who experienced episodic bilateral bloody tears for 3 days, which was associated with epistaxis. The patient's condition was thoroughly evaluated, and all investigations were unremarkable. The patient was then referred to an ophthalmologist for evaluation, and a slit-lamp examination was also unremarkable. After performing all necessary investigations and taking various causes of hemolacria into account, the child was diagnosed as having idiopathic hemolacria. The patient and parent were appropriately counseled regarding the disease, and thereafter, the patient is being followed-up by an ophthalmologist. The reports of the follow-up performed after a month from presentation stated that the patient was progressing favorably, and the bloody tears were resolved spontaneously.

1. Introduction

Hemolacria is the presence of blood in tears [1]. It represents a rare condition as only a few cases have been reported previously. Owing to its rarity and insufficient literature on the condition, the prevalence and predilection of hemolacria regarding a specific gender, race, or age remain uncertain. Hemolacria is one of the most alarming symptoms in ophthalmology, and is associated with multiple underlying etiologies and diseases. In the 6th century, hemolacria was first described in a scientific medical book written by Aetius of Amida [2]. A millennium later, in the 16th century, a report exists of a nun who experienced auricular and ocular hemorrhages every month instead of menstruation [2]. In 1581, Dodonaeus reported a 16-year-old girl who experienced bloody tears instead of menstrual bleeding [2]. The sources of bleeding can be from the conjunctiva (trauma, laceration, inflammations, vascular lesion, or foreign body) or could be also associated with multiple systemic diseases, such as hemophilia (deficiency of clotting factor 8), hereditary hemorrhagic telangiectasia (also known as Osler-Weber-Rendu disease), Henoch-Schönlein purpura, or Gardner-Diamond syndrome [3]. Other sources of bleeding could be from the lid margin, lacrimal puncta, or orbits. To evaluate the condition of such patients, details on their systemic history and physical examination are required for the diagnosis and further workup. Patients are then labeled with idiopathic hemolacria after excluding all underlying causes. We reported a special case due to its age presentation and associated with psychological stress.

2. Case report

An anxious 12-year-old healthy girl, was brought to the Pediatric Emergency Department (PED) in Riyadh, Saudi Arabia, by her mother. The patient presented with complaints of episodic bilateral bloody tears from both eyes occurring since the past 3 days before presentation (Figure 1). Up on enquiring about the history of the patient, the mother explained that the patient was involved in a verbal fight with her sibling, due to which she became emotional and cried. This is where the patient and her mother noticed bloody tears for the first time. The patient had a history of epistaxis, that occurred once and subsided by itself. There was no history of fever, infections, trauma, or any other relevant episodes. In addition to this, there was no history of blood in the stool or change in urine color. There was no family history of bleeding disorders, and no history of surgery or medication use. On physical examination, the patient was hemodynamically stable, active, and afebrile. The patient was not pale

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and did not exhibit jaundice-related symptoms. Ophthalmologic examination of both eyes was normal with normal eyelids no ocular swelling and normal conjunctival fornices and puncti, apart from the bloody tears when the patient cried (Figure 1A and B).

Visual acuity, extraocular eye movements, and fundoscopy were unremarkable. Also, no presence of any vascular lesion in the body. Laboratory and radiological studies including completed blood count, coagulation profile, bleeding time, clotting time, prothrombin time, von Willebrand factor (vWF) antigen assay and factor VIII levels, inflammatory markers, liver function test, urine dipstick, and urine culture were within normal ranges. Computed tomography (CT) scans of the brain were also unremarkable (Figure 2). The patient was referred to an ophthalmology clinic, wherein the patient was examined on a slit-lamp. The ophthalmologist reported that both anterior and posterior segments were normal. Additionally, the intraocular pressure and lacrimal gland area were also normal. All necessary systemic investigations and evaluations for the possible causes of hemolacria were negative; therefore, the child was diagnosed as having hemolacria of an undetermined source, namely idiopathic hemolacria. The patient and parent were counseled regarding the disease and henceforth, the patient is being followed-up by an informed consent was obtained prior to this case report.

### 3. Discussion

Hemolacria represents an exceedingly rare condition that is characterized by the presence of blood in tears. The causes range from hematologic diseases and coagulation disorders, vascular diseases, genetic diseases, infectious disease, traumatic, neoplastic, vascular, inflammatory, menuration, physical exertion, psychogenic influences, simulated bloody tears, medications, or idiopathic cause [2]. In approaching hemolacria case, be careful in taking history and performing systemic physical examination especially ocular examination to rule out any possible causes. For the investigations start by basic labs as complete blood cells, coagulation profile, renal profile, liver function test, factor deficiencies (VIII and vWF antigen assay), urine dipstick, and urine culture followed by CT of the brain to rule out any abnormality or neoplasm.

Consider referring the patient to an ophthalmologist for slit-lamp exam, intraocular pressure measure, and lacrimal gland examination. On a global scale, very few case reports provide insights on hemolacria in the pediatric age group (<14 years) [3, 4, 5, 6, 7, 8, 9, 10, 11]. There are merely nine pediatric case reports and case series (<14 years) identified as idiopathic hemolacria that have been investigated thoroughly [3, 4, 5, 6, 7, 8, 9, 10, 11]. All age groups, from infancy to the elderly, can be affected by hemolacria. Herein, we described the case of a healthy and anxious 12-year-old girl diagnosed as having idiopathic bilateral hemolacria, with unremarkable laboratory and imaging workup. A similar case was reported in India, of a 13-year-old girl presented with bilateral bloody tears associated with bleeding from the ear for the past six months. (3) Also, another similar case was reported in New Delhi, India, of an 11-year-old girl with bilateral bloody tears associated with epistaxis [4]. While in the United States (US), there was a case series that reported four pediatric cases belonging to different age groups that presented with unilateral bloody tears. The first case represented a 12-year-old girl who presented with hemoptysis, headaches, and twitching extremities that lasted for three weeks. The second case was of a 12-year-old girl who experienced a migraine that lasted for a day. The third case was of a 14-year-old girl with isolated episodic unilateral bloody tears with no systemic symptoms that lasted for three months. While the fourth case was of a 6-year-old boy who presented with epistaxis that lasted for one year. All investigations in regard to this case series were negative, and the cause was confirmed to be idiopathic [5]. Moreover, in Kerala, India, a case of a 10-year-old girl has been reported who experienced similar symptoms including bilateral episodic bloody tears, epistaxis, hema-tohidrosis, headache, and psychological stress that lasted for 3 months. (6) In Ankara, Turkey, another similar case was reported of an 11-year-old girl who presented with episodes of idiopathic bilateral bloody tears that lasted for two years. (7) In addition to these, in Nigeria, two cases were reported of a 4-year-old girl and boy who presented with bilateral bloody tears. The boy has a history of flu-like symptoms and epistaxis that lasted for two weeks, while the girl had symptoms such as low-grade fever and yellowish eye discharge that lasted for six days [8]. Similarly, a case was reported in the US of an 11-year-old girl who experienced bilateral bloody tears with no systemic symptoms that lasted for three days [9]. A case of an 11-year-old girl with bilateral bloody tears was also reported in Australia who experienced no systemic symptoms that lasted for three days [10]. Moreover, in a case report in Saudi Arabia, a 4-month-old girl presented with the same symptoms, associated with yellowish eye discharge that lasted for three days and was treated with fusidic acid.

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**Figure 1.** A- Bilaterally occurring bloody tears. B- Bloody tears covering the lacrimal puncta of the right eye and the eyelashes of the patient.  

**Figure 2.** Computed tomography scans of the brain revealed normal findings.
All of the aforementioned cases were investigated thoroughly and revealed unremarkable results during workups. Thus, the cases were confirmed to be idiopathic hemolacria. Most of the cases were followed and observed thoroughly, and had resolved spontaneously.

4. Why should an emergency physician be aware of this?

Hemolacria is a benign and self-limiting condition; however, serious systemic associations may exist. Emergency physicians should be knowledgeable about this rare disease, owing to limited reports on this condition. Parents and the patient need to be counseled appropriately to provide support to efficiently cope with the condition. In addition, regular observation and follow-ups must be conducted, with referrals provided to consult with subspecialists, such as ophthalmologists.

Declarations

Author contribution statement

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Data availability statement

Data will be made available on request.

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Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.