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Hemorrhage and Subconjunctival Vesicle Complicating Varicella in a Child: A Case Report

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Abstract **Case Report**

Chickenpox, a common disease caused by the herpes zoster virus, often manifests itself as a blistering rash in children. However, rare ophthalmological complications can sometimes occur. We describe here an exceptional case of a 10-year-old child diagnosed with chickenpox who developed typical cutaneous vesicles associated with febrile symptoms. On day 3, painless ocular redness in the left eye was observed, leading to an ophthalmological consultation. Examination revealed a subconjunctival hemorrhage and a subconjunctival vesicle, with no other major ocular complications. Treatment was symptomatic with antihistamine eye drops, artificial tears, and eyewash, leading to improvement after five days and complete healing after a fortnight. Ocular complications of chickenpox are rare but can be serious. Subconjunctival hemorrhage, generally benign, is due to a vascular rupture associated with fever or coughing. Subconjunctival vesicles, rarely reported, are the direct result of a VZV viral infection of the conjunctiva. Although these complications do not usually threaten vision, careful monitoring and ophthalmological care are necessary. This observation underlines the importance of varicella vaccination in preventing complications, including rare ocular manifestations.

Keywords: Varicella, Ocular complications, Subconjunctival hemorrhage.

INTRODUCTION

Chickenpox, a common infectious disease caused by the varicella zoster virus (VZV), is often associated with skin blisters. This condition can sometimes lead to rare but significant complications, particularly ophthalmological, although it is generally considered benign in healthy children. We present here an exceptional case in a 10-year-old child with chickenpox, where a series of ocular complications, such as subconjunctival hemorrhage and subconjunctival vesicle, were observed. This gives us valuable insight into these unusual manifestations.

CASE REPORT

We report the case of a 10-year-old child with no particular history who consulted us for a febrile rash that had been evolving for 4 days. Clinical examination revealed numerous umbilicated vesicles, filled with clear fluid, scattered over the trunk, face, and limbs, associated with intense pruritus. Varicella was diagnosed on the basis of clinical signs. On day 3, the patient presented with ocular redness in the left eye, localized in the superior temporal region, painless, with no loss of visual acuity, and mild pruritus, prompting a visit to the ophthalmological emergency department.

An ophthalmological examination revealed a subconjunctival hemorrhage in the left eye, occupying the supero-temporal quadrant, and a subconjunctival vesicle in the middle of the redness, measuring approximately 3 mm in diameter. Visual acuity was preserved at 10/10 bilaterally. Examination of the affected eye revealed no signs of uveitis, keratitis, or optic neuritis. Examination of the adelphic eye showed no abnormalities. The rest of the examination was normal.

Figure 1: Subconjunctival hemorrhage with 3mm vesicles

The patient's eyes were treated with an antihistamine eye drop, artificial tears and copious eyewash. Pruritus improved on the 5th day of treatment. The eye became white on the 15th day of treatment.

DISCUSSION

Chickenpox is caused by a highly contagious virus. It is a widespread childhood disease that, after an incubation period, causes a rash of blisters on the skin and mucous membranes. It can be unpleasant but benign in children but dangerous in adults, pregnant women, and newborns. Smallpox epidemics generally occur in late winter and spring [1]. Varicella can be complicated by bacterial superinfections of the skin, pneumonia, encephalitis, or Reye's syndrome [2]. Ophthalmological complications of chickenpox are rare but potentially serious. They may involve the conjunctiva, cornea, uvea, optic nerve, or retina [3]. We report the case of a 14-year-old child with varicella complicated by subconjunctival hemorrhage and a subconjunctival vesicle in the right eye, without visual impairment or other ophthalmological complications. This is a rare association that testifies to the variety of conjunctival manifestations of varicella.

Vesicles, ulcers, pseudo membranes, hemorrhages, or follicular conjunctivitis may be noted among conjunctival involvement [4].

A benign complication of varicella, subconjunctival hemorrhage, occurs when small conjunctival vessels are ruptured by intraocular pressure or coughing, causing extravasation of blood into the subconjunctival space. It appears as a bright red, circular, or triangular spot, fixed or mobile in relation to the eyeball, occupying part or all of the conjunctival surface. Although it usually presents no symptoms, it may be accompanied by pruritus, lacrimation, or the sensation of a foreign body. It improves spontaneously in a few days or weeks, without any medical intervention. It may occur alone or in tandem with other mucocutaneous lesions caused by smallpox. It may be uni or bilateral. It can occur at any stage of chickenpox, but most often at the onset of the rash. It does not affect vision or ophthalmological prognosis. In several studies, it has been described in children or adults, with variable frequency depending on the series, who have attributed this complication to vascular rupture linked to fever, coughing, or vomiting [5]. Our patient presented with a subconjunctival hemorrhage in the right eye, located in the superior temporal area, triangular in shape, dark red in color, occupying around 30% of the conjunctival surface, and mobile in relation to the eyeball. Although he has no fever, cough, or vomiting, he has intense pruritus around the eye. He has no additional mucocutaneous lesions. On the third day of the rash, he developed an isolated, unilateral subconjunctival hemorrhage.

A rare complication of chickenpox is subconjunctival vesiculation, which indicates the localization of VZV in the conjunctiva. It is caused by a direct viral infection of the conjunctiva by VZV, resulting in inflammation, necrosis, and ulceration of the conjunctival epithelium, leading to vesicle formation. A conjunctival elevation, translucent or hemorrhagic, is filled with clear or cloudy fluid. It may be painful or asymptomatic. It heals spontaneously in one to two weeks, without sequelae [6]. It may occur alone or in tandem with other mucocutaneous lesions caused by smallpox. It can affect one or both eyes. The diagnosis of varicella is mainly based on the symptoms of skin vesicles. Testing for VZV in vesicle fluid by PCR or serology can confirm the biological findings [7].

Paracetamol for fever, antihistamines for pruritus, and local care to avoid superinfections are the main treatments for chickenpox. Severe forms, or those at risk of complications, may be treated with the antiviral acyclovir [8]. The nature and severity of ophthalmological lesions determine the treatment of complications. Subconjunctival hemorrhages and vesicles do not require specific treatment, but regular

ophthalmological surveillance is necessary. Conjunctival pseudomembranes and ulcers may need to be treated locally with antiseptics, antibiotics, or antivirals. Systemic treatment with antivirals, corticoids, or immunosuppressants may be necessary for corneal, uveal, nerve, or retinal involvement [9]. Vaccination is recommended for children aged 12 months and over, for unvaccinated adolescents and adults, and for people at risk of complications.

The patient was managed symptomatically with careful eye surveillance. The evolution was positive, with spontaneous healing of the conjunctival lesions within two weeks.

Our observation highlights the importance of vaccination against smallpox, which can reduce the incidence and severity of this infectious disease and its complications. In addition, it highlights the importance of early diagnosis and effective treatment of ocular complications of varicella, which can be severe and vision-threatening. Finally, it proposes wider and more in-depth studies on the pathophysiological mechanisms, risk factors, therapeutic options, and prognosis of varicella-associated subconjunctival hemorrhages and vesicles in order to better understand and treat this rare complication.

CONCLUSION

The present study examines rare but potentially serious varicella-related ocular complications in children. The observation of a subconjunctival hemorrhage and a subconjunctival vesicle in a young patient with varicella highlights the importance of early recognition and adequate management of these ophthalmological symptoms. This observation highlights the significant impact that such complications can have on vision and underscores the importance of varicella vaccination in preventing these complications and reducing their incidence. Further and more in-depth studies are needed to gain a better understanding of the pathophysiological mechanisms, risk factors, and most effective treatments for these rare but potentially debilitating complications of varicella.

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