



A Case of Varicella Complicated by Preseptal Cellulitis

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Abstract

Chickenpox is a contagious, but typically mild, childhood illness characterized by an itchy rash. It is caused by the varicella zoster virus, which can provide the basis for a secondary bacterial infection. In this report, the case of a 6-year-old boy with preseptal cellulitis as a complication of varicella is presented to emphasize the fact that the illness may lead to severe complications that may require hospitalization.

Keywords: Complication; preseptal cellulitis; varicella.

Chickenpox is a childhood disease presenting with a mild to severe infectious, papulovesicular rash that is caused by the varicella zoster virus (VZV). It is easily transmitted through direct contact, droplets, or air-borne dispersion. The lesions typically first appear on the scalp and subsequently spread to the face and body. A low-grade fever, fatigue, cough, sore throat, and headache are nonspecific indications aside from the rash. Important potential complications include pneumonia and encephalitis. Chickenpox can also be a source of secondary bacterial infections. Impetigo and cellulitis are the most common superficial skin infections seen [1]. Preseptal cellulitis is an infectious condition involving the soft tissues in front of the orbital septum, and may have serious consequences. Patients may develop orbital and intracranial complications when

the condition is not treated [2]. This case is presented to draw attention to possible complications that may occur in immunocompromised children in a public environment where anti-vaccine antagonism is a growing trend.

Case Report

A 6-year-old male patient was initially presented with a papulovesicular rash all over his body, and 3 days later he was referred to our hospital for swelling, redness, and pain around the left eye. The patient was conscious, with extensive edema surrounding his left eye, erythema, and a rash all over his body consistent with chickenpox. The initial diagnosis was varicella and orbital cellulitis, and the patient was hospitalized. He had not received a chickenpox vaccine. There was no evidence of immunodeficiency or chronic disease.

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The laboratory parameters investigated included the following results: anti-VZV immunoglobulin M (+), C-reactive protein level of 2.9 mg/dL, sedimentation rate of 39 mm/hour, white blood cell count of 16.900/mm³, hemoglobin level of 10.6 g/dL, and a platelet count of 268.000/mm³. Biochemical test results were within normal limits. Since a differentiation between preseptal and orbital pathologies could not be made initially, treatment with a broad-spectrum antibiotic combination (ceftriaxone, metronidazole, acyclovir, and vancomycin) was initiated.

After consultation with an eye specialist, the patient was diagnosed with preseptal cellulitis with good visibility of the optic disc, unrestricted eye movements, and a natural light reflex. By the sixth day of hospitalization, the swelling in his eye had resolved. Superficial tissue ultrasonography was requested for local swelling on his cheek, which was evaluated as an abscess. Surgical intervention was not considered. On the 10th day of hospitalization, the abscess drained spontaneously. The patient was discharged after 14 days with complete resolution of the preseptal cellulitis and the abscess, without any scarring.

Discussion

Varicella is one of the most common infectious diseases of childhood, and resolves spontaneously within 7 to 10 days. However, complications can cause serious morbidity and even mortality. Ninety percent of cases occur in childhood, and half of the cases of mortality are children [3]. In countries where the varicella vaccine recommended by the World Health Organization as part of a routine vaccination program has been used for many years, the rate of mortality and hospitalization due to illness and complications has been greatly reduced [4, 5].

The most common problem encountered in healthy individuals is a secondary bacterial infection. Cellulitis and impetigo are the most common superficial tissue infections seen in combination with chickenpox. These infections can cause scarring despite proper treatment [1]. A bacterial superinfection may be seen within 14 days of primary varicella infection [6]. In our patient, preseptal cellulitis developed 3 days after the onset of the initial rash.

In a study conducted by Türel et al. [7], the researchers reported skin and soft tissue infections as the most common complications of varicella. A secondary bacterial complication was the most frequently observed complication in a study performed by Belet et al. [8]. Jackson et al. [9] found that half of the patients who were hospitalized with the diagnosis of varicella had secondary skin and soft-tissue infections.

Complications due to secondary bacterial infections were reduced in Japan after more emphasis was placed on practicing good hygiene [10]. Where there are inadequate hygiene and hand washing habits, it is difficult to reduce the frequency of secondary bacterial infections of the skin and soft tissue. In our patient, preseptal cellulitis associated with varicella resolved without scarring following intensive antibiotic treatment.

It has been reported that in the United States of America, some 10.000 of the average 4 million chickenpox cases per year were admitted to the hospital due to complications, and 100 patients died [11]. A single dose of the vaccine has been found to be 84.5% effective against all varicella and 100% effective against severe varicella [12].

Viral diseases that affect the immune system may lead to eye infections. Infections that are common in childhood, such as chickenpox, and which disrupt skin integrity predispose individuals to infection. One dose of the varicella vaccine was added to our national vaccination plan in 2013. The patient described in this case had not been vaccinated and experienced a significant soft tissue infection related to varicella that required hospitalization. The varicella vaccine should be administered according to the national vaccination schedule. Though chickenpox most often has a benign course, families should not be remiss in vaccinating their children, as the varicella virus can have serious complications.

Informed Consent: Written informed consent was obtained from the parents of the patient for the publication of the case report and the accompanying images.

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