

## Angioedema Related to Infectious Mononucleosis

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<sup>1</sup>Celal Bayar University Faculty of Medicine, Department of Child Health and Diseases, Manisa, Türkiye

<sup>2</sup>Celal Bayar University Faculty of Medicine, Department of Pediatric Chest Diseases, Manisa, Türkiye

<sup>3</sup>Celal Bayar University Faculty of Medicine, Department of Pediatric Allergy And Immunology, Manisa, Türkiye

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### ABSTRACT

Epstein-Barr virus (EBV), a member of the Herpes-viridae family, is a microorganism could be present in various clinical presentations, from upper respiratory tract infection findings to asymptomatic liver function test elevation, from facial paralysis to angioedema. This case report has been prepared to emphasize EBV infection as a rare factor in the etiology of angioedema.

**Keywords:** Angioedema, Epstein-Barr virus, infectious mononucleosis

### INTRODUCTION

Epstein-Barr virus (EBV) infection is common in children, primary EBV infection is usually asymptomatic at young ages, and presents with very different findings as age progresses. Infectious Mononucleosis, an acute infection caused by EBV, presents with very different clinical symptoms.<sup>1</sup> Angioedema is a reversible, localized swelling of the deep cutaneous layers caused by mediators that increase vascular permeability. It is usually non-dependent, asymmetrical, and nonpruritic. It affects the loose connective tissues of the tongue, lips, face, mouth, throat and extremities. It is often a self-limiting, benign condition but may present as a medical emergency due to upper airway obstruction.<sup>2,3</sup> EBV is a rare factor in the etiology of angioedema, but it should be considered in cases that do not respond to conventional anti-inflammatory therapy.

### Patient and Observation

A 16-year-old female patient presented with previous medical swelling in both eyes. It was learned that the patient with symptoms of sore throat and high fever for ten days (Figure 1-3). The patient

presented to the emergency department on the second day of angioedema findings; with a history of parental dexametasone and pheniramine maleate administration in emergency department and oral cetirizine prescription as maintenance treatment two days ago. It was stated that the angioedema findings of the case did not regress with treatment.

On physical examination, her general condition was good, she was conscious, and her vital signs (body temperature 36.8 °C, heart rate 88/min, respiratory rate 20/min) were normal for her age. In the systemic physical examination of the patient, there was bilateral bufissure edema. In the oropharynx examination, tonsillar hypertrophic, membranous lesions on bilateral tonsils were observed. A few mobile multiple lymphadenopathies smaller than 1 cm in the bilateral cervical chain, measuring 1 cm in the right preauricular, 1 cm in the right submandibular, and 1.5 cm in the left submandibular, were detected. Other physical examination findings were normal. There was no hepatosplenomegaly.

In her history, it was determined that she was being followed up for allergic asthma. There were no additional features in her family history. In laboratory examinations, hemoglobin 14.8 gr/

D. Lüleci Dağlı: 0000-0003-3877-5277; H. Yüksel: 0000-0001-9577-8445; S. Tunca: 0000-0003-3193-1062; Ö. Yılmaz: 0000-0001-6051-5020



**Address for Correspondence:** Duygu Lüleci Dağlı,

Celal Bayar University Faculty of Medicine, Department of Child Health and Diseases, Manisa, Türkiye

**E-mail:** duygululeci.104@gmail.com **ORCID-ID:** orcid.org/0000-0003-3877-5277

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**Figure 1.** The patient has angioedema on both eyelids



**Figure 2.** The patient has angioedema under both eyes



**Figure 3.** The patient has angioedema on both upper and lower eyelids

dL, leukocytes  $17800/\text{mm}^3$ , and 61.7% lymphocyte dominance, absolute lymphocyte count 10990, platelet 376000, aspartate aminotransferase (AST) 120 U/L, alanine aminotransferase (ALT) 157 U/L, urea 22 mg/dL, creatinine 0.59 mg/dL. Sedimentation dL, sedimentation 9 mm/hour, autoimmune panel negative. In the viral serology was, EBV viral capsid antigen antibody (VCA) IgM IgM, EBV early antigen and VCA IgG were positive. A Downey cells were observed in the peripheral smear. No abnormality was found in the patient's complete urinalysis.

Considering the current history, clinical, physical examination and laboratory findings, infectious mononucleosis infection and EBV-associated angioedema were considered in the patient. The outpatient follow-up was performed with supportive treatment. In the follow-up of liver function tests, AST 21 U/L and ALT 19 U/L decreased to the normal range.

## DISCUSSION

Infectious mononucleosis is a clinical picture in which EBV is seen in 60-70% of childhood age groups in many countries caused by seropositivity.<sup>4</sup> The most common symptoms in patients with infectious mononucleosis are sore throat, exudative tonsillitis, and fever lasting longer than 5 days.<sup>1,5</sup> Lymphomonocytosis is most common in the laboratory. The detection of Downey cells (larger than mature lymphocytes, blue cytoplasm, large, adherent around erythrocytes) in the peripheral smear is helpful in the diagnosis. In many tests used for the diagnosis of EMN, viral capsid antibodies called EBV-VCA, which are formed against the antigens on the surface of the EBV, are detected.<sup>6</sup> The most common complication of the disease was determined as a hematological complication.<sup>7</sup>

Our patient had angioedema, which is a rare complication of EBV. Although cases of urticaria and angioedema secondary to the infection caused by EBV have been reported in the literature, there is no single case of directly related angioedema. Csuka et al.<sup>8</sup>, dealing with 107 series of hereditary angioedema follow-up cases, investigated EBNA-1 IGG levels in patients with bradykinin pathway angioedema caused by the immune system triggering of EBV infection and found a strong correlation between them. Nguyen and Christiansen<sup>9</sup> emphasized that periorbital swelling due to EBV infection should not be confused with angioedema in a 19-year-old case and emphasized that angioedema is seen as a rare complication in EBV infection. However, there are many publications in the literature showing that EBV infection in children is associated with cold urticaria.<sup>10</sup>

Angioedema is localized swelling of the skin and submucosal tissues and is usually benign and self-limited. However, in cases of angioedema involving the upper airway, airway obstruction can be life-threatening. Regardless of the underlying etiology, airway protection is critical and life-saving in patients with angioedema.<sup>11</sup> In this study, there was a clinical judge with orbital angioedema secondary to EBV infection, unresponsive to antihistamine treatment and without urticaria.

## Ethics

**Informed Consent:** Parents of the patient provided informed consent to publish the report.

**Peer-reviewed:** Externally peer-reviewed.

## Authorship Contributions

Concept design: D.L.D., H.Y., S.T., Ö.Y., Data Collection or Processing: D.L.D., H.Y., S.T., Ö.Y., Analysis or Interpretation: D.L.D., H.Y., S.T., Ö.Y., Literature Search: D.L.D., H.Y., S.T., Ö.Y., Writing: D.L.D., H.Y., S.T., Ö.Y.

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