

Association of Periorbital Edema and Fever in Acute Infectious Mononucleosis: A Case Report

Akut Enfeksiyöz Mononukleozda Periorbital Ödem ve Ateş Birlikteliği: Bir Olgu Sunumu

Kaya Hüseyin Süer¹, Aslı Feride Kaptanoğlu²

¹Department of Infectious Diseases and Clinical Microbiology, Near East University Medical Faculty, Nicosia, Cyprus

²Department of Dermatology, Near East University Medical Faculty, Nicosia, Cyprus

ABSTRACT

Differential diagnosis and establishment of the etiopathogenesis of periorbital edema is important for physicians, particularly the dermatologists and ophthalmologists. It may be the symptom of a broad spectrum of diseases. Although it was defined as one of the prodromal signs of infectious mononucleosis (EMN), its occurrence is rare in clinical practice. In this paper, we reported a 15 year-old female patient, who admitted with periorbital edema and fever, and subsequently diagnosed as EMN and the differential diagnosis of periorbital edema and features of orbital involvement in EMN were discussed.

Key words: edema; Epstein-Barr virus; eye; fever; infectious mononucleosis

ÖZET

Periorbital ödemin etiopatogenezinin belirlenmesi ve ayırıcı tanısı klinisyenler, özellikle dermatologlar ve oftalmologlar için önemlidir. Periorbital ödem bir çok farklı hastalığın belirtisi olarak görülebilir. Enfeksiyöz mononukleozun (EMN) prodromal belirtisi olarak tanımlanmış olmasına rağmen klinik uygulamada nadir görülür. Bu yazıda, periorbital ödem eşliğinde ateş şikayeti ile başvuran ve EMN tanısı alan 15 yaşındaki bir kadın olgu sunumu ile periorbital ödemin ayırıcı tanısı ve EMN'de orbital tutulumun özellikleri tartışılmıştır.

Anahtar kelimeler: ödem; Epstein-Barr virus; göz; ateş; enfeksiyöz mononukleoz

Introduction

Fever and periorbital edema may be the symptoms of a broad spectrum of diseases. Both infectious and non-infectious diseases can all lead to fever and periorbital edema. Since some of these diseases might be emergent, differential diagnosis is critical for proper and immediate intervention^{1,2}. A careful history and physical examination should be performed in order to decide which further tests are needed to clarify the diagnosis. In this report, we aimed to present association of periorbital and fever in a patient finally diagnosed with infectious mononucleosis.

Case Report

A 15 year old female patient admitted to the emergency department with the symptoms of periorbital edema and fever. She had been experiencing fatigue, mild fever, sore throat and headache for the last 10 days. Since the fever had risen higher and associated with periorbital edema in the last two days, she decided to come to our emergency department.

On physical examination, there were some findings including periorbital edema, tonsillitis with white membranes, cervical lymphadenopathies on anterior and posterior chains and hepatosplenomegaly (Figure 1).

Her body temperature was 38.7 °C. Quick swab for Strep A was negative. Complete blood count revealed that white blood cells: 11.890 / mm³, lymphocytes (%69) and monocytes (%17.3). There was no eosinophilia and thrombocytes were 196.000 / mm³. Immune globulin E was 37 U/L. BUN: 7 mg/dL,

Yard. Doç. Dr. Kaya Hüseyin Süer, Yakın Doğu Üniversitesi, Yakın Doğu Bulvarı
Leşkeşa - Türkiye, Tel. 0 392 675 10 00 / 2020 Email. kayasuer@myynet.com
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Figure 1. Bilateral periorbital edema in infectious mononucleosis.

creatinin: 0.57 mg/dL, AST: 406 U/L, ALT: 377 U/L, LDH: 550 U/L, CRP: 1.87 mg/dL.

Microscopic examination of the peripheral blood revealed Downey cells (%24). The initial laboratory results were compatible with lympho-monocytosis, thus we focused on Infectious mononucleosis (EMN). Serologically ELISA tests showed EBV-EBNA Ig G (-), EBV VCA IgM: (+), EBV VCA-EA Ig G: (+). A cranial magnetic resonance imaging was performed to rule out other causes of dramatic periorbital edema. It was normal other than bilateral subcutaneous edema in palpebral areas.

These results confirmed the diagnosis of EMN and the patient had received symptomatic treatment such as fluid replacement, paracetamol and anti-inflammatory mouthwash. She recovered clinically in 10 days.

Discussion

Periorbital edema may originate from a wide variety of diseases. Associated findings including fever,

nausea, vomiting, and coughing may help in diagnosis. In addition, the characteristics of the edema as being localized, diffuse, unilateral or bilateral may also be helpful².

Chronic forms of periorbital edema may originate from many reasons, however there are only a few diseases causing acute periorbital edema. In our patient, the onset of the periorbital edema was sudden in a few days, thus we excluded chronic reasons such as nephrotic syndrome or tumors.

Bilateral periorbital edema in the absence of general edema is an important clue that is usually seen in allergic reactions (angioedema), trichinosis, Kawasaki disease or bilateral periorbital cellulitis³⁻⁵.

Allergic reactions like contact dermatitis and angioedema should be differentiated at first. In our patient, there were neither a suspicious exogen contact nor erythema or itching. Although angioedema in periorbital area is a very common cause, our case was not compatible with angioedema since its association with fever is not usual. Moreover, angioedema episodes of the periorbital region usually do not last more than 24 hours. However our patient was experiencing periorbital edema for the last two days. In addition, there was no history of drug use or suspicious food ingestion.

Kawasaki disease may cause periorbital edema due to periorbital vasculitis, however can be differentiated by its other systemic features such as onset age and clinical presentation. Trichinosis also may present with periorbital edema, but generalized edema and, myalgia are dominant clinical presentations with an eosinophilic shift in peripheral blood count¹. Bilateral cellulitis with its acute onset characteristic in association with fever rarely is seen bilaterally, however in our case it was excluded by MRI imaging which also helped to exclude a retro orbital tumor as well^{6,7}.

EMN is an infectious disease caused by Epstein-Barr virüs (EBV). Major clinical symptoms are sore throat, fever, fatigue, anorexia, myalgia, headache and rarely nausea, coughing, vomiting and artralgia. Periorbital edema is also known to be a symptom of EMN⁸. However, in textbooks it is not classified as a major and classical symptom of EMN⁹.

The association of periorbital edema with EMN was first described by Hoagland and is referred to as "Hoagland sign"^{10,11}. Hoagland et al. reported

periorbital edema in one third of EMN cases in 1952, whereas Mason et al. reported less frequencies in 1958^{8,12}.

In 1991, Decker et al. reported a case of early EMN with periorbital edema. Similar to our patient, their patient was 18 years old and the edema was presented within the first few days of the disease¹³. In contrary with the above mentioned cases, in a study dealing with the clinical features of EMN in Turkish children, the authors did not observe periorbital edema in any of their patients¹⁴.

Ophthalmologic involvement in EBV is unclear. Inflammation in the lacrimal gland with lymphocytic infiltrate was reported and regarded to cause ophthalmic involvement¹². In addition, the mucosal edema in the sinuses was regarded to contribute in periorbital edema¹⁵.

There are also reports of optic neuritis due to EBV^{3,16,17}. In these reports, inflammation was present in optic nerve fibers. Anderson et al. pointed out that all cases of retrobulbar neuritis associated with EBV were male patients with an age range of 6 and 29 years. He also noticed that neuritis developed 2-12 weeks following the acute infection and the finding suggested an immunologic mechanism³. However, the article did not provide information about the presence of periorbital edema or lacrimal gland involvement in those cases.

Conclusion

Periorbital edema may be an alerting symptom of EBV. Infectious mononucleosis should be kept in mind if the patients have association of periorbital edema and fever.

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