

A Rare Case of Orbital Cellulitis with Zona Zoster

Ökkeş Zortuk, Fatih Selvi, Cihan Bedel

University of Health Sciences Turkey, Antalya Training and Research Hospital, Clinic of Emergency Medicine, Antalya, Turkey

Abstract

Orbital and preseptal cellulitis is very important diagnoses. These diseases are often caused by bacteria. Early diagnosis and treatment are important for complications. In our cases, 71-years old female patients had swelling lesions around the left eye. There was no rhinosinusitis or bacterial infection sign. On the computed tomography image, soft tissue was edema. The findings showed zone zoster infections around the eye. Zona zoster around orbital tissue is a rare condition. Untreated cases will have lost vision and intracranial complications. Therefore, these cases must be diagnosed early and treated with antiviral agents.

Keywords: Preseptal cellulitis, varicella, emergency department

Introduction

Zona zoster is a viral disease, that stays latent in the ganglion. The adult population prevalence is 1.2-3.4 persons per 1000. The elderly population prevalence is 3.9-11.8 persons per 1.000 [1,2]. Near of eye Zona zoster infection is expanded on the trigeminal nerve divisions. In these cases, it observed keratitis, uveitis, and optic neuritis. The other condition is preseptal cellulitis near the eye [2]. It is screened on physical examination; pain, eye movement, ptosis, and computed tomographic imaging are the important diagnostic tests [3]. The preseptal cellulitis is from Gram-negative *Cocci*; *Staphylococcus aureus*, *Streptococcus pneumoniae* etc. [4]. In our case report, we presented viral preseptal cellulitis from varicella zoster.

Case Report

Seventy one-years old female patient came to the emergency department (ED) with swelling in the left eye. Different types of rash lesions and swelling on the scalp and orbital zone were observed. In the patient medical history, it was hypertension and diabetes mellitus. Therefore, she takes aspirin, sitagliptin, metformin, and lansoprazole daily. Vital signs were screened in ED. Arterial blood pressure was 173/112 mmHg and peripheral oxygen saturation was 99%. Heartbeats were calculated at

112/min and body temperature was 36 degree celsius. Blood biochemical investigation displayed creatinine 0.9 mg/dL, C-reactive protein 13.3 mg/L (references value: 0-5 mg/L), and white blood cells 6.700/mm³.

On first physical examination in ED, the patient consciousness was clear, cooperation was normal, and Glasgow Coma score was 15/15. The respiratory was regular and spontaneous. The right eye was clear and eye movements were normal. The left eye had swelling lesions, but movements and vision were normal (Figure 1). Then after these findings, it was planned computed tomography (CT). The right maxillary sinuses had edema. Around the left eye, the soft tissue had edema (Figure 2). After CT, the otolaryngology department consulted the patient. In examinations by the otolaryngology specialist, there was no pathological sign of sinusitis to complication of cellulitis. The second time, consulted by the ophthalmology department, the patient was examined by the specialist. On biomicroscopic examination, the right eye was clear, and the left eye's cornea had punctate epitheliopathy. There was no vitritis. All examination findings and CT imaging were screened and diagnosed around the left eye lesions from varicella-zoster infections. It was suggested that ganciclovir gel and hyaluronic acid eye drops, were called to the outpatient clinic.



Address for Correspondence: Cihan Bedel, University of Health Sciences Turkey, Antalya Training and Research Hospital, Clinic of Emergency Medicine, Antalya, Turkey
Phone: +90 507 564 12 54 **E-mail:** cihanbedel32@gmail.com **ORCID-ID:** orcid.org/0000-0002-3823-2929
Received: 04.10.2022 **Accepted:** 23.01.2023

Discussion

Orbital cellulitis was usually caused by sinusitis. In the past reviews, orbital cellulitis was observed with 89-95% rhinosinusitis [5,6]. Orbital cellulitis cases must be recognized and early treated. Untreated cases will present with loss of vision and intracranial complications [4]. Around of eyes, preseptal cellulitis cases were around of eyebrows, occurred by mucormycosis, and occurred on sino-orbital osteoma [7-9]. Zona zoster of orbital zone cases presented with myositis, preoptic neuritis, and dacryocystitis [10]. Trigeminal neurotic cases were limited. These cases were usually detected in the division of V1 and V2 of the trigeminal nervous [11]. Our cases were shown on the trigeminal nerve branches of V1 and V2. The infection lesions were observed around the left eye. The left eye cornea has been damaged. The early diagnoses and treatment were very important for this case.



Figure 1. The left eye had swelling lesions (arrow)



Figure 2. Edematous image in the left eye and soft tissue in the patient's computed tomography (arrow)

Most varicella-related complications are in the pediatric age group, and neurological and infectious complications have been reported. Although many sporadic cases exist, the causative agent has often been reported as group A beta hemolytic *Streptococcus*. Less so are hemophilus influenza type B and other pathogens. In general, medical treatment is sufficient, and surgical drainage may be required in selected cases [12]. In our case, preseptal cellulitis was one of the possible cutaneous complications of varicella zoster virus infection.

Conclusion

Although bacterial agents often cause orbital cellulitis in the ED, we wanted to draw attention to a viral orbital cellulitis case as in our case. Emergency physicians should keep in mind that varicella-zoster infections may also cause eye symptoms in patients with orbital cellulitis.

Ethics

Informed Consent: Informed consent was obtained from the patient in this case report.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: F.S., Concept: Ö.Z., F.S., C.B., Design: Ö.Z., F.S., C.B., Data Collection or Processing: Ö.Z., F.S., C.B., Analysis or Interpretation: Ö.Z., F.S., C.B., Literature Search: Ö.Z., F.S., C.B., Writing: Ö.Z., F.S., C.B.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Heineman TC, Cunningham A, Levin M. Understanding the immunology of Shingrix, a recombinant glycoprotein E adjuvanted herpes zoster vaccine. *Curr Opin Immunol.* 2019;59:42-8.
2. van Oorschot D, Vroiling H, Bunge E, Diaz-Decaro J, Curran D, Yawn B. A systematic literature review of herpes zoster incidence worldwide. *Hum Vaccin Immunother.* 2021;17:1714-32.
3. Hamed-Azzam S, AlHashash I, Briscoe D, Rose GE, Verity DH. Common orbital infections ~ state of the art ~ part I. *J Ophthalmic Vis Res.* 2018;13:175-82.
4. Brambilla L, Maronese CA, Toulaki A, Veraldi S. Herpes zoster following COVID-19: a report of three cases. *Eur J Dermatol.* 2020;30:754-6.
5. Botting AM, McIntosh D, Mahadevan M. Paediatric pre- and post-septal peri-orbital infections are different diseases. A retrospective review of 262 cases. *Int J Pediatr Otorhinolaryngol.* 2008;72:377-83.
6. Seltz LB, Smith J, Durairaj VD, Enzenauer R, Todd J. Microbiology and antibiotic management of orbital cellulitis. *Pediatrics.* 2011;127:566-72.
7. Ferreri A, Roszkowska A, Fabiani C, Polimeni G, Ferreri G, Aragona P. A Preseptal cellulitis following to foruncle on the eyebrow: a case report. *Invest Ophthalmol Vis Sci.* 2009;50:4834.

8. Mehta S, Pandey A. Rhino-orbital mucormycosis associated with COVID-19. *Cureus*. 2020;12:e10726.
9. Bagheri A, Feizi M, Jafari R, Kanavi MR, Raad N. Orbital cellulitis secondary to giant sino-orbital osteoma: A case report. *Cancer Rep (Hoboken)*. 2021;4:e1296.
10. Bak E, Kim N, Khwarg SI, Choung HK. Case Series: herpes zoster ophthalmicus with acute orbital inflammation. *Optom Vis Sci*. 2018;95:405-10.
11. Pelloni LS, Pelloni R, Borradori L. Herpes zoster of the trigeminal nerve with multi-dermatomal involvement: a case report of an unusual presentation. *BMC Dermatol*. 2020;20:12.
12. Qualickuz Zanan NH, Zahedi FD, Husain S. Varicella zoster causing preseptal cellulitis - uncommon but possible. *Malays Fam Physician*. 2017;12:37-9.