

Bilateral nodular episcleritis due to Varicella-Zoster virus

Episclerite nodular bilateral do vírus varicela-zoster

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ABSTRACT

The patient is a 10 years-old girl, with chief complaint of recent bilateral red eye and history of chickenpox disease. Examination revealed nodular episcleritis of both eyes. After treatment with topical steroids, the disease was subsided. Varicella-Zoster virus is a rare cause of episcleritis. In this case it seems that the mechanism of involvement is immune-related, rather than direct tissue involvement by virus.

Keywords: Varicella-Zoster virus; Episcleritis; Autoimmunity; Steroid therapy

RESUMO

A paciente é uma menina de 10 anos de idade, com queixa principal de olho vermelho bilateral recente e história de doença da capapora. O exame revelou episclerite nodular de ambos os olhos. Após o tratamento com esteróides tópicos, a doença foi diminuída. O vírus varicela-zoster é uma causa rara de episclerite. Neste caso, parece que o mecanismo de envolvimento é imuno-relacionado, ao invés de envolvimento direto do tecido pelo vírus.

Descritores: Varicella Zoster Virus; Episclerite; Autoimunidade; Terapia esteróide

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Os autores declaram não haver conflito de interesses.

Recebido para publicação em 19/7/2019 - Aceito para publicação em 16/9/2019.

INTRODUCTION

Episcleritis is a benign inflammation of episcleral tissue. The majority of cases remain idiopathic. The most common underlying cause is an auto immune related connective tissue disease, such as rheumatoid arthritis. The other conditions mentioned in the literature are rare, including gout, rosacea and infectious causes such as syphilis, tuberculosis, Lyme disease and herpes zoster virus.^(1,2) The most common type of episcleritis is the simple form (localized or diffuse).

Case report

The patient is a 10 years-old girl, referred by her pediatrician because of bilateral red eye. She was diagnosed with chickenpox disease because of the classic skin rashes and vesicles. 4 days after skin lesions, she developed bilateral red eye. She had complaint of mild pain and irritation. She had no complaints of decreased vision or discharge. The patient's parents denied any similar previous episode. The past medical history and past ocular history were negative for any specific illness rather than the concurrent chickenpox disease. Currently the patient wasn't taking any specific medication.

The uncorrected visual acuity was 10/10 in both eyes. A Relative Afferent Pupillary Defect (RAPD) is not detected. Grossly, there was a bright red injection in both eyes, in the temporal conjunctiva. In the slit lamp examination, there was a localized redness in the temporal and inferotemporal conjunctiva in both eyes. There was a mobile, slightly tender nodule in the site of injection in the right eye and two similar nodules in the left eye (Figure 1 and 2).

The episcleral tissue was inflamed. The inflammation is partly blanched with the use of topical phenylephrine 2.5% drop. Intra-ocular pressure was 18 mm HG for both eyes. Other examinations were within normal limits.

The diagnosis of bilateral nodular episcleritis, presumably due to Varicella Zoster Virus (VZV) was made. Medical therapy was initiated using topical Prednisolone Acetate 1% ophthalmic drop q4h/day and preservative-free artificial drop q4h/day. After 1 week, there is a significant subjective and clinical improvement (Figure 3 and 4). The steroid drop was continued for another one



Figure 1: Nodular episcleritis, right eye



Figure 2: Nodular episcleritis, left eye



Figure 3: Right eye, post treatment



Figure 4: Left eye, post treatment

week and then gradually tapered during 2 weeks. Two months after discontinuation of treatment, no sequel was noted and there was no recurrence.

DISCUSSION

Episcleritis is a benign inflammation of episcleral tissue. Most of the patients remain idiopathic, and most of them require no work up to detect systemic etiologies. However, a minority of cases is due to systemic conditions, such as infectious or collagen vascular disorders.¹ Varicella zoster virus (VZV), a member of herpes virus family, is the microorganism responsible for chicken pox and zona zoster diseases. After the primary infection, VZV remains in the host as latent infection and it may recur later (zoster disease). Chicken pox infection is usually seen in nonimmunized children and self limited. Ophthalmic involvement is rare except for eyelid vesicles and follicular conjunctivitis. A vesicular lesion may occasionally seen in the conjunctiva. Other manifestations, such as punctuate or dendritic keratitis, corneal infiltrations, various types of keratitis, uveitis, chorioretinitis, optic neuritis and acute retinal necrosis (ARN) are rare.^(3,4)

Involvement of scleral and episcleral tissue are also uncommon. In a large case series by Gonzalez-Gonzalez et al, 9.4% had infectious causes, and 74.4% were due to herpes virus.⁽⁵⁾ In another case series of 9 patients with herpetic scleritis, no one has been diagnosed with Varicella-zoster infection.⁽⁶⁾ Scleritis associated with stromal keratitis due to VZV was also reported. This patient was treated with steroid, so the involvement may be of immune response to VZV.⁽⁷⁾ 18.8% of scleritis patients in a case series by Leal C et al have been diagnosed with herpes virus infection; however, they report good response to treatment with antiviral agents.⁽⁸⁾ A case of necrotizing scleritis due to VZV was reported by Inci Ulu Gungor.³ Another case of late onset scleritis, after an episode of VZV uveitis was reported, which was first treated by acyclovir and steroid; but after steroid tapering, a significant worsening was occurred. Finally the patient was treated by methothrexate. The authors suggest both infectious and immune mediated process. Their patient was also HLA B-27 positive, in favor of autoimmune reaction.⁽⁹⁾

Up to our knowledge, there is no report of bilateral nodular episcleritis associated with active chicken pox disease. Our patient was presented with ocular involvement during active infection. Absence of pain and clinical appearance were in favor of episcleritis, rather than the scleritis. The patient was treated by topical steroids only, in the setting of active chicken pox. This is strongly in favor of immunologic process, rather than direct tissue infection.

CONCLUSION

In conclusion, here we report a case of bilateral VZV-related nodular episcleritis. The patient's good response to topical steroid, without any systemic or topical antiviral treatment, favors an immunologic process. Although ophthalmic involvement, especially episcleritis, is rare during VZV infection, every ophthalmologist must be familiar with proper management. Because the mechanism of involvement seems to be immunologic rather than direct infection, treatment with steroid is the mainstay of therapy.

REFERENCES

1. American Academy of Ophthalmology. Basic and Clinical Science Course (BCSC) 2017-2018. External disease and cornea. USA: American Academy of Ophthalmology ; 2018. Chapter 11.
2. Singh J, Sallam A, Lightman S, Taylor S. Episcleritis and scleritis in rheumatic disease. *Curr Rheumatol Rev.* 2011;7(1):15–23.
3. Gungor IU, Ariturk N, Beden U, Darka O. Necrotizing scleritis due to varicella zoster infection: a case report. *Ocul Immunol Inflamm.* 2006;14(5):317–9.
4. Pavan-Langston D. Viral disease of the ocular anterior segment: Basic science and clinical disease. In: Foster CS, Azar DT, Dohlman CH, editors. *The cornea—scientific foundations and clinical practice.* Philadelphia: Lippincott Williams & Wilkins; 2005. p. 297–393.
5. Gonzalez-Gonzalez LA, Molina-Prat N, Doctor P, Tauber J, Sainz de la Maza MT, Foster CS. Clinical features and presentation of infectious scleritis from herpes viruses: a report of 35 cases. *Ophthalmology.* 2012;119(7):1460–4.
6. Bhat PV, Jakobiec FA, Kurbanyan K, Zhao T, Foster CS. Chronic herpes simplex scleritis: characterization of 9 cases of an underrecognized clinical entity. *Am J Ophthalmol.* 2009;148(5):779–789.e2.
7. Threlkeld AB, Elliott D, O'Brien TP. Scleritis associated with varicella-zoster disciform stromal keratitis. *Am J Ophthalmol.* 1992;113(6):721–2.
8. Leal C, Le Roux K, Rahmi A, Varron L, Broussolle C, Denis P, et al. [Scleritis, clinical features, etiologies and treatment: a case series of 32 patients]. *Rev Med Interne.* 2014;35(8):491–7. French.
9. Loureiro M, Rothwell R, Fonseca S. Nodular scleritis associated with herpes zoster virus: an infectious and immune-mediated process. *Case Rep Ophthalmol Med.* 2016;2016:8519394.

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