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Ocular nonsuicidal self-injury in a teenager

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Abstract:

A 14-year-old male teen presented with unilateral episcleritis, unresponsive to topical and systemic corticosteroid therapy, without a history of ocular trauma or evidence for systemic diseases. The presence of foreign bodies in the conjunctival mucus of the hyperemic fornix has been noticed during one of the follow-up examinations. The toxicological analysis of conjunctival mucus revealed the presence of ethylene glycolmonomethyl ether and triethilene glicolebuthyl ether, used as solvents in nail polish removers and all-purpose cleaners. An unexpected etiology of chemical self-inflicted episcleritis was determined. The teen was admitted to a psychological assessment, after which a psychotherapeutic treatment was recommended. Episcleritis is characterized by the acute onset of ocular pain and redness, with a frequent recurrent and stressful course. Since it can be associated with life-threatening systemic vasculitides, a prompt, aggressive immunosuppressive therapy may be considered, both for the ocular inflammation and for the underlying systemic condition. Rarely episcleritis does not improve despite topical and systemic therapy, administered in a stepladder way. The reported teenager case needed a complex multidisciplinary approach to achieve the correct diagnosis and to avoid unnecessary treatments. In the case of recognized "nonsuicidal self-injury," a psychological evaluation is strongly recommended, to identify and address underlying neuropsychiatric problems.

Keywords:

Adolescence, anterior scleritis, episcleritis, nonsuicidal self-injury, self-induced ocular lesion

Introduction

Episcleritis is usually a self-limiting inflammatory disease affecting episclera, without a detectable cause in about two-third of the cases.[1] Less frequent in childhood than in adults, it can be related to severe systemic diseases, including systemic vasculitides, connective tissue diseases, and inflammatory bowel disease.[2]

We report the case of a 14-year-old male who presented with recurrent episcleritis, unresponsive to topical and systemic therapy. The complex multidisciplinary approach that leads to the correct diagnosis is illustrated.

Case Report

A 14-year-old Caucasian male teen was referred to our Ocular Immunopathology Unit for persistent unilateral episcleritis despite an oral corticosteroid cycle (prednisone 25 mg/day for 3 days, tapered in 9 days). No history of ocular trauma neither surgery nor evidence for systemic diseases were present. On examination, the best corrected visual acuity was 0.63 in both eyes. The right eye was normal; in the left eye, there was intense diffuse nasal bulbar redness. Direct and consensual pupillary reactions, extraocular muscle movements, intraocular pressure, and fundus examination, were normal in both eyes. A cycle of intense topical therapy (nethylmicine-dexamethasone and tropicamide 1%) was prescribed.

Since there was no improvement with treatment, and symptoms worsened, 1 week after the patient underwent to three pulses of methylprednisolone 1 g/day. All of the following exams resulted beneath normal values: complete and differential blood

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count, white blood cells count, hemoglobin, platelets, erythrocyte sedimentation rate, C-reactive protein, proteinic profile, serousamiloid type A, serology for Epstein-Barr virus, herpes simplex virus, herpes zoster virus, *Borrelia* spp. and *Bartonella* spp.

To rule out a posterior scleritis, an ocular B-scan ultrasonography was performed and resulted normal. After the second intravenous (i.v.) pulse of methylprednisolone, the headache and ocular pain worsened. Magnetic resonance imaging of the brain and orbits resulted negative.

Two weeks after the past i.v. pulse of methylprednisolone, he referred an intense headache, but a neurologic evaluation resulted normal. Six days after unilateral ocular redness relapsed again. A slit-lamp examination evidenced some foreign bodies in the conjunctival mucus of the hyperemic nasal fornix. They look like tiny cloth or synthetic filaments, inducing suspect of a voluntary rubbing. A sample of conjunctival mucus was then taken and sent to the toxicological laboratory.

Topical therapy and oral prednisone were progressively tapered and stopped in 2 weeks. The laboratory investigation revealed the presence in the sample of ethylene glycol monomethyl ether and triethilenglicole buthyl ether. These, also known as 2-methoxyethanol and methyl tert-butyl ether, respectively, are clear liquids used as solvents and found in nail polish removers and all-purpose cleaners. After these results, the probable auto-induced origin of episcleritis was suggested to the teen mother. A psychological evaluation to investigate the possible causes and plan a support program was recommended. The teen was admitted to a psychological assessment. The trouble to dwell on the themes proposed by the psychologist, as well as a continuous attempt to move the discussion into less conflictual topics emerged during the psychological talks. Already 1 year before, following reported incidents of bullying, the boy had undergone a psychological evaluation that revealed a posttraumatic stress disorder associated with an obsessive-compulsive trait, for which psychotherapy has been indicated, but not performed.

The psychological evaluation showed significant relationship difficulties with peers, an insufficient introspective ability, and inadequate coping strategies, with a familiar framework of strong conflicts between the parents. Given these elements, it was renewed an indication for a psychotherapeutic treatment.

Discussion and Conclusions

Episcleritis is a self-limited inflammatory process that seldom extends to adjacent ocular tissues and do not usually cause visual loss. It can occur among adults as part of an underlying systemic disease in one-third of cases. The most frequent associations are connective tissue diseases and vasculitides; less frequently, it can also be associated with herpetic infections, inflammatory bowel disease, gout and a variety of other systemic disorders.[3] Episcleritis in childhood has not been frequently reported, and it is bilateral in one-half of the cases. Like in adults, it is a self-limited inflammatory process that does not spread to adjacent ocular tissues or compromise vision, and could easily be mistaken by the nonophthalmologist for a conjunctivitis. Therefore, it could be more common than already supposed. Although episcleritis is benign, the ophthalmologist must keep in mind the possibility of an associated systemic disease also in children. Thus, diagnostic evaluation should include a relevant medical history and physical examination, giving special attention to rheumatologic diseases.[2] Although the most frequent causes of episcleritis are connective tissues diseases, in two-third of the cases the etiology remains unknown. It is unusual for patients with simple, diffuse anterior scleritis not to show any improvement despite topical and systemic therapy, administered in a stepladder way.[4] When such a situation occurs, the suspect of a factitious, self-inflicted condition must be ruled out. The most common described factitious ophthalmic problem is a functional visual loss.[5] Self-inflicted eye injuries are rare. In one literature review, all patients with self-inflicted eye injuries suffered from some kind of psychotic disorders. One-third also showed some other type of self-injurious behavior.[6]

It has also been described a typical self-inflicted injury to the ocular surface known as "keratoconjunctivitis artefacta."[7] There are no reported cases of factitious injuries to the anterior ocular surface in childhood. Self-inflicted scleritis is unusual, and our case had not so many clues to its factitious nature that had been documented in other reports.[4] As suggested by other authors, a prompt and correct diagnosis could save time, the expense of investigations and the administration of unnecessary and potentially toxic medications. Psychological evaluation is strongly recommended, to identify and address underlying neuropsychiatric problems.[8] The term "nonsuicidal self-injury" denotes the deliberate destruction of parts of the body, that is self-inflicted and that determines immediate damage, in the absence of suicidal intent, for purposes not culturally sanctioned. It includes behaviors such as cutting, scratching, stinging, and burning the skin.[9] It is a particularly significant phenomenon among teens and young adults with a prevalence of 15%–20% and represents a risk factor for future suicidal behavior.[10]

A study of the psychological aspects may nevertheless be crucial to put any instance on self-harming and

also direct the family to the most appropriate clinical pathway.

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Conflicts of interest
There are no conflicts of interest.

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