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Acute allergy reaction after posterior sub-Tenon's triamcinolone injection in the treatment of intermediate uveitis in the asthmatic patient

Steroids are still very commonly used in the treatment of uveitis. The goal is to reach a sufficient concentration at the site of inflammation. The ophthalmologist has the choice between topical, periocular or systemic administration. Among the periocular administration routes, the most useful modalities are parabulbar injections of aqueous steroids in acute anterior uveitis resistant to topical steroids, and posterior sub-Tenon's injections of respiratory steroids in intermediate or posterior uveitis (3,9). The main advantage of posterior sub-Tenon's steroid injections (PSTSI) is a prolonged effect obtained through a maximum local concentration of the drug that causes minimum systemic side effects (2). Despite relatively widespread use, there are very few reports in the literature on the efficacy and side effects of posterior sub-Tenon's triamcinolone in the treatment of uveitis.

CASE REPORT

On 29 September 2001, a 21-year-old female (MS) was admitted to our hospital with a clinical picture of bilateral uveitis. She had a one-month history of decreased visual acuity in both eyes. She had received systemic antibiotic therapy, because of bronchitis, prior to her vision impairment. Medical history showed positive prick tests (pollinosis) and asthma bronchiale from 5 years. On initial ophthalmologic examination the anterior segment of both eyes was normal. Fundus examination of both eyes revealed vitreous infiltration, similar to fungal infection. The visaul acuity in the right eye was 0.6, in the left eye 0.3. To find the etiology of inflammation the vitreous sample was taken for examination. Neither direct specimen nor culture showed bacterial or fungal etiology. Serological tests for *Candida* and *Aspergillus* antigens, toxoplasmosis, toxocariasis and boreliosis were also negative. Serum tests for antinuclear antibodies (ANA) and cytoplasmic antibodies were negative. On the basis of clinical picture and laboratory tests performed, the diagnosis of idiopathic intermediate uveitis (pars planitis) was made. On 11 October, 2001 the routine treatment of pars planitis with a visual acuity reduced to 0.7 or less, the injection of posterior sub-Tenon's respiratory steroids was applied on the left eye. The respiratory steroid used was a suspension of 40 mg of triamcinolone acetonide (Polcortolon 40, Jelfa). Shortly after topical anesthesia of the conjunctiva by drops of Alcaine and with a cotton swab soaked with 5% Lignocaine, an injection of 1ml of triamcinolone acetonide (40mg/ml) was administered in the superotemporal sub-Tenon's space, using side-to-side movements in order to make sure that the needle was away from the sclera. Two hours after the injection a massive blepharoedema of upper

and lower eyelid developed and increased in size during the next two hours, spreading onto the upper part of the cheek. The palpebral fissure was totally closed. Chemosis of the bulbar and palpebral conjunctiva was also noticed. Neither ophthalmic nor systemic symptoms were observed. Immediately after the allergic reaction developed 300mg of Hydrocortisone was administered intravenously. Two hours later additionally 400mg of Hydrocortisone with 250ml of sodium chloride in intravenous infusion was administered. From 11 to 14 of October the patient was treated with 2mg of Meclastine fumurate (Clemastine) intravenously twice a day and from 11 to 17 of October Ceterzinum (Zyrtec) 10mg once a day orally was administered. Emadine drops twice a day were instilled into the left eye as a local treatment. On the next day the blepharoedema insignificantly decreased, but the palpebral fissure was still closed. The blepharoedema resolved completely on the third day after the steroid injection. The patient was discharged from the hospital on 17 October, 2001. During a seven-month follow up, the visual acuity on both eyes was 0.6. The last vitreous examination on 14 of May, 2002 showed single, thick floaters in the vitreous on both eyes and thin preretinal fibrosis in both eyes.

DISCUSSION

Posterior sub-Tenon's respiratory steroid injections are fairly commonly used in uveitis. The technique of injection was first described by Nozik in 1972 (6). It allows a high concentration of drug to be delivered to the posterior segment of the eye via trans-scleral absorption, with a minimal risk of systemic side effects. Intraocular concentrations are higher than those obtained via systemic administration, particularly when the eye is inflamed (2,4). Several published series showed PSTSI as a very effective treatment of posterior uveitis. Tanner et al. (9) noticed objective improvement in visual activity in 25 of 28 treated eyes. Lafranco-Dafflon et al. (3) observed significant visual acuity improvement in 59.5% of the treated eyes. Similiar good results were reported by Helm and Holland (1) in series of 18 patients and by Yoshikawa et al. (11) in series of 24 patients. As for any administration of steroids, PSTSI is not devoid of known side effects. The most common complications of the treatment are: transient elevation of intraocular pressure (glaucoma), cataract and blepharoptosis. The ratio of consecutive glaucoma varied from 0% to 36% in the literature (3,5,8,11). The development of cataract secondary to steroid therapy is less frequent than secondary glaucoma, however, Lafranco-Dafflon et al. (3) observed it in seven of 58 treated eyes and Yoshikawa et al. (11) in six of 29 cases. Tanner et al. (9) observed mild ptosis in 2 of 25 treated patients and Yoshikawa et al. (11) in one of 24 patients. In our case the intraocular pressure was normal and no cataract was observed during the follow up period. Weijtens et al. (10) suggested that periocular steroid injections may result in significant systemic steroid levels and a risk of systemic side effects. In our department over one hundred posterior sub-Tenon's injections of triamcinolone acetonide in the treatment of uveitis have been performed. Three of the above described patients suffered additionally from asthma bronchiale. Only one case, presented in this paper, developed an acute allergic reaction after PSTSI of triamcinolone acetonide. The reason for such allergic reaction is probably connected with a phenomenon of cross allergy. An allergy to steroids is most often observed in dermatology as a contact allergy to steroids. The first case of this type of allergy was described in 1958, and now, in some centers, the percentage of hypersensivity to steroids exceeds five among patients with a eczema. Similar allergic reactions have been observed in patients with asthma an allergic rhinitis as a result of hypersensivity to steroids used intranassaly or in an inhalation (7). On the basis of the analysis of cross reactions and analysis of model compound the alergic steroids were divided into 4 groups A, B, C, D. Triamcinolone acetonide, which was injected sub-tenonaly in our patient belongs to group B together with Amcimonide and Budezonide (7). According to our knowledge, our case is the first described in the literature. Our intention was to stress the potential risk of cross allergy to steroids in asthmatic patients treated with posterior sub-Tenon's steroid injection.

REFERENCES

1. Helm C. J., Holland G. N.: The effects of posterior subtenon injection of triamcinolone acetonide in patients with intermediate uveitis. Am. J. Ophthalmol., 120, 55, 1995.
2. Hyndiuk R. A., Reagan M. G.: Radioactive depot-corticosteroid penetration into monkey ocular tissue. Retrobulbar and systemic administration. Arch. Ophthalmol., 80, 499, 1968.
3. Lafranco-Dafflon M. et al.: Posterior sub-Tenon's steroid injections for the treatment of posterior ocular inflammation: indications, efficacy and side effects. Graefe's Arch. Clin. Exp. Ophthalmol., 237, 289, 1999.
4. Levine N. D., Aronson S. B.: Orbital infusion of steroids in the rabbit. Arch. Ophthalmol., 83, 599, 1970.
5. Mueller A. J. et al.: The effect of deep posterior subtenon injection of corticosteroids on intraocular pressure. Am. J. Ophthalmol., 125, 158, 1998.
6. Nozik R. A.: Periocular injection of steroids. Trans. Am. Acad. Ophthalmol. Otolaryngol., 76, 695, 1972.
7. Rudzki E.: Alergeny. Odcinek 69: steroidy-piwalan tiksokortolu. Med. Prakt., 9, 143, 2001.
8. Smith R. E. et al.: Complications of chronic cyclitis. Am. J. Ophthalmol, 82, 277, 1976.
9. Tanner V. et al.: Posterior sub-Tenon's triamcinolone injections in the treatment of uveitis. Eye, 12, 769, 1998.
10. Weijtens O. et al.: Peribulbar corticosteroid injection: Vitreal and sereum concentration after dexamathasone disodium phosphate injection. Am. J. Ophthalmol., 123, 358, 1997.
11. Yoshikawa K. et al.: Posterior sub-tenon injections of respiratory corticosteroids in uveitis patients with cystoid nacular edema. Jpn. J. Ophthalmol., 39, 71, 1995.

SUMMARY

We report the case of a 21-year-old female patient afflicted with atopic asthma admitted to hospital in order to diagnose and treat bilateral uveitis. After diagnostic examination: serological tests for *Candida* and *Aspergillus* antigens, analysis of direct vitreous preparation and of culture searching for fungal and bacterial etiology, tests for antinuclear antibodies and for boreliosis, the diagnosis of idiopathic intermediate uveitis (*pars planitis*) were made. Routine treatment with Polcortolon in sub-Tenon's triamcinolone injection was applied. It resulted in acute allergic reaction characterized by blepharedema and chemosis. Hydrocortison, Clemastin, Zyrtec, Calcium and locally Dexamethason and Emadine in drops instilled to conjunctival sac were administered resulting in symptom disappearance.

Ostra reakcja alergiczna po podaniu Triamcynolone acetonide (Polcortolon) pod torebkę Tenona w leczeniu idiopatycznego zapalenia części pośredniej błony naczyniowej u chorej z astmą

Przedstawiamy przypadek 21-letniej chorej z astmą atopową, przyjętej do kliniki w celu diagnostyki i leczenia zapalenia błony naczyniowej obu oczu. Po przeprowadzeniu badań diagnostycznych: surowicy krwi w kierunku antygenów *Candida* i *Aspergillus*, badania preparatu bezpośredniego z ciała szklistego i hodowli w kierunku etiologii grzybiczej i bakteryjnej, przeciwciał p/jądrowych i badania w kierunku boreliozy ustalono rozpoznanie kliniczne idiotatycznego zapalenia części pośredniej błony naczyniowej (*pars planitis*) obu oczu. Zastosowano rutynowe leczenie Polcortolonem w injekcji pod torebkę Tenona, po której wystąpiła ostra reakcja alergiczna w postaci obrzęku powiek i spojówek. W leczeniu zastosowano Hydrocortison, Clemastin, Zyrtec, Calcium, a miejscowo Emadine w kroplach do worka spojówkowego, po których objawy ustąpiły.