A Potential Side Effect of Oral Topical Steroids: Central Serous Chorioretinopathy

Abstract
Topical corticosteroids are some of the most common drugs used in oral medicine for treating atrophic and erosive lesions that affect the mucosa. Adverse effects of these drugs include oral candidiasis with associated burning mouth and hypogeusia, hypersensitive reactions to the drug, and inhibition of the hypothalamic–pituitary–adrenal axis and secondary adrenal insufficiency. The ocular side effects of oral topical steroids are less documented. This short communication describes a case of central serous retinopathy that developed following administration of oral topical steroid.

Keywords: Central serous chorioretinopathy, central serous retinopathy, ocular side effect, oral topical steroids

Introduction
Topical corticosteroids are some of the most common drugs used in oral medicine for treating atrophic and erosive lesions that affect the mucosa.[1] Because of their satisfactory therapeutic effects, there has been an increase in the indiscriminate use of topical steroids without proper monitoring and evaluation. This has led to many adverse effects including oral candidiasis with associated burning mouth and hypogeusia as well as hypersensitive reactions to the drug. Systemic absorption of the drug can lead to inhibition of the hypothalamic–pituitary–adrenal axis and secondary adrenal insufficiency.[2] The ocular side effects of oral topical steroids are less documented.

Brief Report of the Case
A 36-Year-Old Female Patient presented to our department with the complaint of white patches and associated burning sensation of oral cavity. Following clinical examination and histopathological examination of biopsy specimen from right buccal mucosa, she was diagnosed as having reticular oral lichen planus on bilateral buccal mucosa. She was started on oral topical steroid (triamcinolone acetonide 0.1%). One week later, she reported with blurring of vision of both eyes. She was referred for ophthalmologic consultation and was diagnosed to have acute central serous retinopathy (CSR) following fluorescent angiography examination. Oral topical steroid was discontinued and she was advised ketorolac eye drops (0.3%). Alternatively, the patient was advised topical oral mucosal application of placental extract. On 2-month follow-up, there was significant improvement in her ocular condition.

Discussion
Central serous chorioretinopathy (CSCR), also known as CSR, central serous pigment epitheliopathy, and central serous retinitis, is a disease that appears to impair choroidal circulation to central retinal pigment epithelial cells causing serous detachment of the retina. CSR is attributed to the disruption of the ionic pump of the retinal pigmented epithelial cells (RPE) or hyperpermeability of the choroidal vasculature. Glucocorticoids are known to cause CSR probably by increasing cyclic adenosine monophosphate in RPE cells and hence changing the ionic pump function or by altering the permeability of blood-aqueous barrier and disrupting the outer blood-retinal barrier.[3] The mean age of onset is at 30 years. CSCR has been reported to be associated with the use of vasoconstrictive agents such as epinephrine, endogenous hypercortisolism, systemic corticosteroid use, and other conditions that elicit choroidal vascular dysfunction such as hypertension, pregnancy, dialysis, organ transplantation, and use of anticoagulants. Many cases have been reported following oral topical steroid use.[4]

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transplantation, and systemic lupus erythematosus. An association with migraine has also been documented.[4]

Systemic corticosteroid intake (oral or intravenous) is a well-documented independent risk factor for CSCR. It has also been described after local administration of corticosteroids through the following routes: inhaled, oral and intranasal sprays, epidural, intra-articular, topical dermal, and periocular. Less than 2% of topically applied steroid is absorbed into systemic circulation after single stay on application of >1 day.[5] Steroid-induced CSCR has less male predilection than idiopathic CSCR and has frequently a bilateral and atypical presentation. It was suggested that steroid-induced CSCR may be related to an idiosyncratic response in selected vulnerable individuals rather than to a dose-dependent effect since very low doses can induce CSCR episodes.[6]

In acute cases, patients report symptoms related to subretinal detachment (SRD) in the macular area: blurred vision, relative central scotoma, metamorphopsia, moderate dyschromatopsia, hypermetropization, micropsia, and reduced contrast sensitivity. It is clinically detectable on fundus examination and on optical coherence tomography, with limited focal or multifocal RPE alterations that may be limited to small pigment epithelial detachments and leakage through the RPE on fluorescein angiography. The SRD usually resolves within 3–4 months, leaving in most cases no long-term symptoms, except color discrimination defects in some patients.[6]

**Conclusion**

The ocular adverse effects of oral topical steroids are yet to be investigated. However, it is imperative that the dental clinicians be informed about this potential adverse effect since the inadvertent use of oral topical steroids, without proper monitoring, has become an unfortunate routine practice in dental medicine. The oral physician should be well informed about the condition and should be prompt in advising timely ophthalmologic consultation for his patients under oral topical steroids.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Krasteva A. Topical corticosteroids in oral pathology. J Int Med Assoc Proc Sci Pap 2011;16:80-1.
2. González-Moles MA. The use of topical corticoids in oral pathology. Med Oral Patol Oral Cir Bucal 2010;15:e827-31.
3. Shah SP, Desai CK, Desai MK, Dikshit RK. Steroid-induced central serous retinopathy. Indian J Pharmacol 2011;43:607-8.
4. Yanoff M, Duker JS. Ophthalmology. Elsevier 2014. p. 1404.
5. Dhar S, Seth J, Parikh D. Systemic side-effects of topical corticosteroids. Indian J Dermatol 2014;59:460-4.
6. Daruich A, Matet A, Dirani A, Bousquet E, Zhao M, Farman N, et al. Central serous chorioretinopathy: Recent findings and new physiopathology hypothesis. Prog Retin Eye Res 2015;48:82-118.