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CASE REPORT

Periocular allergic contact dermatitis following topical Mitomycin C eye drop application

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Abstract

A 63-year-old woman had an extensive limbal papilliform tumoural lesion of her left eye. Mitomycin C (MMC) was applied to the area at a dose of 0.2 mg/ml after total surgical excision of the lesion. The lesion was diagnosed as invasive squamous cell carcinoma on histopathology and topical 0.02% MMC was prescribed four times daily to the left eye. A severe periocular contact dermatitis of the left eye developed two days after starting MMC. The patch test result was positive. The periocular dermatitis resolved after discontinuation of the topical MMC and treatment with a topical corticosteroid.

Keywords: Mitomycin C, squamous cell carcinoma, contact dermatitis

Introduction

Squamous neoplasia of the ocular surface is a rare condition with a range of clinical presentations from conjunctival intraepithelial neoplasia (CIN) with no frank invasion to invasive squamous cell carcinoma (SCC) (1).

Mitomycin C (MMC) is an antibiotic isolated from *Streptomyces caespitosus*. It undergoes metabolic activation to become an alkylating agent that is cytotoxic to both proliferating and non-proliferating cells (2).

Following the first report on the use of topical MMC in the treatment of CIN, many other studies have confirmed its effectiveness for both primary and adjuvant therapy with very low recurrence rates of 0–22% (3–6). Allergic reaction and punctal stenosis were noted as the main complications in the largest study dealing with complications of MMC in the treatment of ocular surface neoplasia (7). However, we could find only one study, reporting two cases of contact dermatitis after topical MMC application, on contact dermatitis following the use of topical MMC (8).

We present a rare case of periocular allergic contact dermatitis following topical MMC eye drop application.

Case presentation

A 63-year-old female presented with a left conjunctival lesion that had been present for the last year. The visual acuity was 20/20 in both eyes. Slitlamp examination revealed 180-degree invasion of the left superior limbus by an extensive papilliform tumoural lesion. Fundus examination was normal in both eyes. The lesion was excised with a lateral margin of 3 mm and the base was cauterized. MMC at a dose of 0.2 mg/ml was applied with a sponge to the local area for about 2 min. The lesion was reported as conjunctival SCC after histopathological examination and topical 0.02% MMC four times a day to the left eye was prescribed. The patient presented with a severe dermatitis involving her left eyelids 48 h later (Figure 1). There was no history of allergic disease. A patch test was performed with MMC 0.01% under a Finn chamber on the skin and the result 48 h later showed that the patient was allergic to the MMC preparation. The periocular dermatitis resolved after discontinuation of the topical MMC and treatment with a topical corticosteroid.

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Figure 1. Periorbital allergic contact dermatitis due to topical MMC eye drop.

Discussion

The most widely accepted standard treatment of neoplastic conjunctival-corneal lesions is total surgical excision with cryotherapy (5–8). Several adjunctive intraoperative or postoperative treatments have been used to decrease the recurrence rates of neoplasms. Intraoperative treatments include MMC, lamellar sclerokeratectomy, and cryotherapy while postoperative treatments are topical MMC, and interferon α -2b (5).

MMC eye drops at a dose of 0.02% four times a day were prescribed to be used for 4 weeks postoperatively in our case to reduce the risk of recurrence (3). However, we encountered the rare complication of periorbital allergic contact dermatitis due to topical MMC application.

Side-effects such as conjunctival hyperemia, ocular pain, punctate keratopathy, punctal stenosis, blepharospasm, and limbal stem cell damage may develop following topical MMC application (8,9). Daniell et al. have reported contact dermatitis in two cases after the use of topical MMC eye drops but there was no detailed information and documentation regarding these cases (8).

Contact allergy due to MMC in these cases may develop through direct contact of the substance to the skin, as in our case.

Contact dermatitis due to MMC presenting as an exfoliative dermatitis of the palms and soles or generalized itching has occurred after intravesical instillation or topical application. Patch tests performed with MMC at a concentration of 0.01% in these patients and the results were positive, suggesting a type IV hypersensitivity reaction which is cell mediated (9). Similarly, the patch test was positive in our patient indicating a type IV hypersensitivity reaction.

Allergic contact dermatitis is the most common cause of periorbital dermatitis. Other common causes in the differential diagnosis are periorbital atopic dermatitis, periorbital airborne contact dermatitis, irritant contact dermatitis, and periorbital rosacea (10). There was no history or clinical findings of any other cause in our case.

Common elicitors of periorbital allergic contact dermatitis are cosmetic products (face cream, eye shadow, etc.) and eye drops with the usual allergens being fragrances, preservatives and drugs (10). There was also no history of using these cosmetic products in our case.

This case highlights the need for clinicians to be aware of the potential of topical MMC eye drops to cause periorbital allergic contact dermatitis.

Declaration of interest

The authors declared no conflict of interest.

References

1. Lee GA, Hirst LW. Ocular surface squamous neoplasia. *Surv Ophthalmol* 1995;39:429–450.
2. Abraham LM, Selva D, Casson R, Leibovitch I. Mitomycin: clinical applications in ophthalmic practice. *Drugs* 2006;66:321–340.
3. Frucht-Pery J, Rozenman Y. Mitomycin C therapy for corneal intraepithelial neoplasia. *Am J Ophthalmol* 1994;117:164–168.
4. Gupta A, Muecke J. Treatment of ocular surface squamous neoplasia with Mitomycin C. *Br J Ophthalmol* 2010;94:555–558.
5. Doganay S, Er H, Tasar A, Gürses I. Surgical excision, cryotherapy, autolimb transplantation and mitomycin-C in treatment of conjunctival-corneal intraepithelial neoplasia. *Int Ophthalmol* 2005;26:53–57.
6. Ballalai PL, Erwenne CM, Martins MC, Lowen MS, Barros JN. Long-term results of topical mitomycin C 0.02% for primary and recurrent conjunctival-corneal intraepithelial neoplasia. *Ophthalmol Plast Reconstr Surg* 2009;25:296–299.
7. Khong JJ, Muecke J. Complications of mitomycin C therapy in 100 eyes with ocular surface neoplasia. *Br J Ophthalmol* 2006;90:819–822.
8. Daniell M, Maini R, Tole D. Use of mitomycin C in the treatment of corneal conjunctival intraepithelial neoplasia. *Clin Experiment Ophthalmol* 2002;30:94–98.
9. Dudley BW, Malecha MA. Limbal stem cell deficiency following topical mitomycin C treatment of conjunctival-corneal intraepithelial neoplasia. *Am J Ophthalmol* 2004;137:950–951.
10. Kunkeler L, Nieboer C, Bruynzeel DP. Type III and type IV hypersensitivity reactions due to mitomycin C. *Contact Derm* 2000;42:74–76.
11. Feser A, Mahler V. Periorbital dermatitis: causes, differential diagnoses and therapy. *J Dtsch Dermatol Ges* 2010;8:159–166.