

Successful Use of Oral Acyclovir in Ophthalmic Molluscum Contagiosum

Abstract

Molluscum contagiosum is a common tropical contagious viral infection, involving the skin and the mucous membranes. Ophthalmic molluscum contagiosum is a relatively uncommon condition presenting as secondary follicular conjunctivitis or kerato-conjunctivitis and may present with or without obvious dermal skin lesions. Often, unsuspected and misdiagnosed by eye care providers or observed as a concomitant feature by a skin care provider, unilateral conjunctivitis due to molluscum contagiosum remains easily treatable. Clearance of the primary skin lesion leads to rapid and complete resolution of ophthalmic signs. Two cases of ophthalmic molluscum contagiosum treated successfully with oral antiviral drug acyclovir are presented herewith as anecdotal therapeutic evidence.

Keywords: *Acyclovir, ophthalmic molluscum contagiosum, unilateral follicular conjunctivitis*

Introduction

Molluscum contagiosum (MC) is a mildly contagious viral infection having persistent skin and exceptional mucosal lesions. The causative agent is a large, double-stranded deoxyribo nucleic acid (DNA) poxvirus; the molluscum contagiosum virus (MCV)^[1] that causes the typical, discrete, umbilicated, small, waxy, pearly white, or skin-colored papules appearing on the trunk, face, and the limbs. Although MCV commonly affects children and sexually active adults, with high incidence of autoinoculation and heteroinoculation, facial MC lesions are chiefly seen in the pediatric and immune-deficient populations. Low CD4 counts have been linked to widespread facial molluscum lesions, which therefore have become a marker for severe HIV disease.

Ophthalmic MC (OMC) lesions are often located on the eyelid margins or on the lid near the palpebral aperture and may lead to secondary unilateral follicular conjunctivitis and at times superficial punctate keratitis. Uncommonly, subepithelial opacity and pannus and intraocular MC following corneo-scleral laceration is seen,^[2-5] whereas a primary conjunctival or corneal molluscum lesion is a very rare occurrence. Although simple excision of primary lesion

leads to resolution of OMC, till date there has been no approved oral antiviral drug efficacious against MCV. Acyclovir, an oral antiviral drug, has been reported to be used anecdotally for MC.

We report the clinical findings and successful treatment of two immune-competent pediatric patients with eyelid MC lesions and unilateral chronic conjunctivitis with a therapeutic trial of the antiviral drug acyclovir.

Case Presentation

Case 1

A 9-year-old girl presented with persistent burning, tearing, and itching of her right eye for over 1 year, which had led her to discontinue schooling. She had noticed concomitant papular lesions around the eye. Various topical derivate of antibiotics, steroids, antiallergic drugs, and antiviral drugs such as topical iduroxidine prescribed by eye care providers had failed to provide respite. Visual acuity measured was 20/20 in both eyes. Intraocular pressure (IOP) was 12 mmHg in both eyes.

On anterior segment examination, multiple dome-shaped translucent papules with central umbilication were noted over erythematous and mildly edematous upper and lower eyelids. The conjunctiva was intensely hyperemic with peri-limbal

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bulbar injection. The superior and inferior conjunctivae showed a marked follicular reaction. There was no corneal involvement. The left eye was completely normal [Figure 1].

With a clinical diagnosis of molluscum contagiosum and a provisional suspicion of secondary conjunctivitis due to MC, we excised one of the cutaneous lesions near the eye and it was sent for histopathological examination (HPE). The HPE showed intranuclear and intracytoplasmic inclusion bodies typical of MC confirming the clinical diagnosis of molluscum contagiosum [Figure 2].

Blood testing revealed no systemic pathology or immune deficiency. A therapeutic trial with Acyclovir 15mg/kg five times a day for 10 days resulted in complete clearance of the ophthalmic complaints [Figure 3].

She was placed on further antiviral suppressive therapy with Tab. Acyclovir prescribed as 200 mg twice a day given once a week. At the end of 2 months, there was complete clearance of the cutaneous lesions as well [Figure 4].



Figure 1: Patient 1 showing multiple inflamed umbilicated papular lesions near the right eye, on the upper eyelid, and the right cheek with intense conjunctival hyperemia

Weekly acyclovir was prescribed for a total of 6 months. She was followed-up for 6 months with no recurrences. The patient remained lesion free at the end of 2 years.

Case 2

The second case was the sibling of the index case. She presented with dacryorrhea with congestion of right eye of 8 weeks duration. Her visual acuity was 20/20 in both eyes, and IOP was 14 mmHg in both eyes. The left eye was completely normal in all respects. The right eye showed multiple MC lesions near the eye. There was conjunctival hyperemia in the right eye with mild-to-moderate follicular reaction. The cornea was clear [Figure 5].

A clinical diagnosis of molluscum contagiosum with unilateral molluscum conjunctivitis was made, and she received Tab. Acyclovir in the same dosage regimen as her sister with complete resolution of the ocular complaints in a week and clearance of the cutaneous lesions in further 8 weeks. The patient was subsequently lost to follow-up.

Discussion and Conclusion

Facial MC lesions on or around the eyelid may lead to anterior segment involvement of the eye due to the viral proteins shed from the lid lesions into the tear film leading to a hypersensitivity reaction or toxic damage.^[4] Cutaneous lesions themselves may vary from pinhead to peasize and may be located on the skin of the eyelids, lid margins, and the cilia roots. It is likely for the primary eye care providers to miss the cutaneous lesions and continue to treat the associated congestion of the conjunctiva as allergic conjunctivitis as demonstrated in our case report.^[2,6] Schornack *et al.* observed that in almost 40% of cases, OMC were not diagnosed in the first visit.^[4] Primary skin care providers in their turn need to be aware that MC lesions near the eye may trigger anterior segment

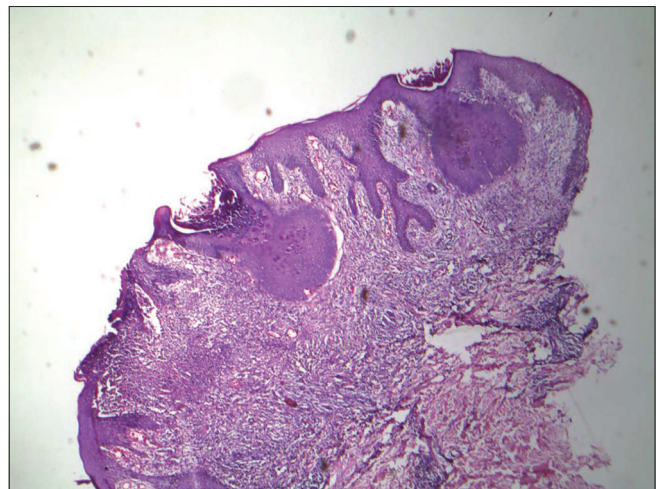


Figure 2: Pathological specimen showing excised papule and eosinophilic intracytoplasmic viral inclusion bodies (Haematoxylin and Eosin, 10x) observed in the cytoplasm of squamous cells in the stratum granulosum layer

inflammation presenting most commonly as unilateral chronic conjunctivitis. Molluscum affecting only the eye as described by Hindaal and van Bijsterveld remains a rarity.^[7] This underlines the importance of a vigilant and meticulous examination and being aware of association of ophthalmic complaints with cutaneous MC lesions.

Fortuitously clinical consensus without reliable evidence-based recommendation suggests that removal of the primary MC lesion rapidly and dramatically treats the OMC.^[1]

Serin *et al.* and Balakrishnan *et al.* have reported immediate resolution of conjunctivitis as well as keratitis with excision of primary MC lesions around the eyelid.^[2,6] However, surgical or chemical ablative therapies in a periorbital location risks infection and scarring especially in pediatric or immune compromised patients.^[2] Cidofovir and Brincidofovir, a broad spectrum lipid conjugate of cidofovir, have been shown to be efficacious in MC lesions.^[8,9] However, till date there is no Food and Drug Administration approved oral therapy for MC.

Acyclovir is a nucleoside analogue with proven antiviral activity *in vitro* against herpes virus and cytomegalovirus. Its activity against MCV has not been documented. Guan *et al.* found acyclovir to have no inhibitory effect on the mD4 gene of MCV.^[8] Despite this, in the real world scenario, acyclovir has anecdotally shown efficacy in the treatment of MC. Castelli *et al.* have reported complete recovery of multiple MC lesions in a 50-year immune competent male with 5 days of acyclovir administered as 200 mg 5 times a day.^[1]

Both of our patients presented with long-standing red eye and lid edema. In both cases, the molluscum lesions had



Figure 3: Patient 1 showing gradual resolution of ocular lesions at the end of 10 days of acyclovir



Figure 4: Patient 1 showing complete resolution of cutaneous lesions at the end of 2 months with residual postinflammatory hyperpigmentation

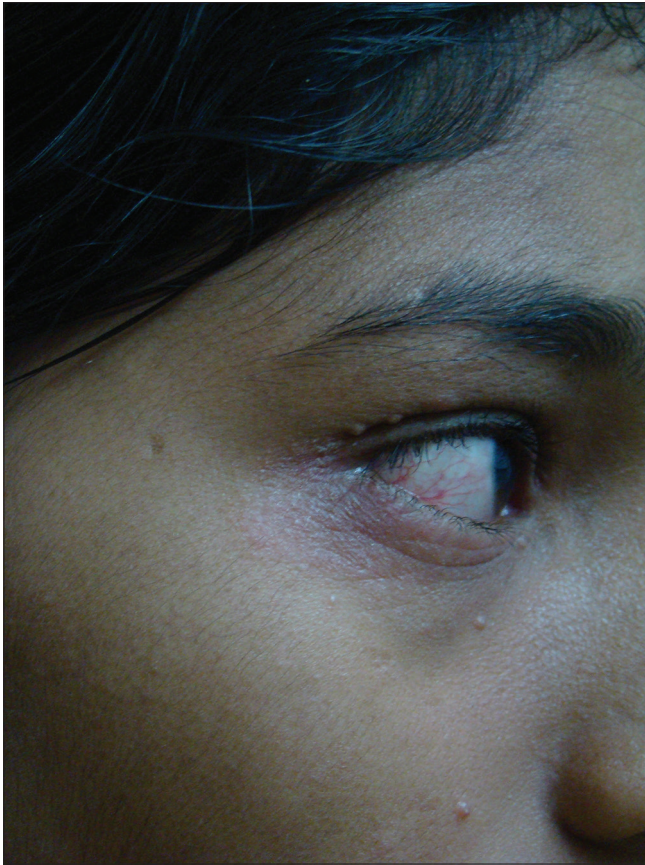


Figure 5: Patient 2 with multiple MC lesions over upper and lower eyelids near the ocular aperture conjunctival hyperemia

been overlooked and the patients were being treated as allergic conjunctivitis. Fearing progressive disease with likelihood of corneal neovascularization and scarring, a therapeutic trial with oral acyclovir was instituted in the index case. However, self-limited MC is known to cause recurrent lesions over 6–9 months. In view of the young age of the patient, the effective initial response to acyclovir, and the socio-scholastic loss she had already suffered, we attempted a suppressive therapy with acyclovir prescribed weekly for 6 months. It was observed that cutaneous lesions gradually cleared, eventually leaving the patients lesion-free at 6 months.

In conclusion, we present these two case reports as anecdotal evidence of successful use of acyclovir for the treatment of ocular molluscum contagiosum.

Undoubtedly, the need of the hour is an antiviral drug that is both specific and definite for the treatment of molluscum infections.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in this 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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Nil.

Conflicts of interest

There are no conflicts of interest.

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