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resolution of symptoms. Bullock and Goldberg⁶ recommend excision of the diverticulum to avoid infective sequelae or an eventual increase in size.

Although uncommon, this entity should be included in the differential diagnosis of recurrent ADC when the lacrimal system appears patent, especially in children and young adults.^{2,4}

Acknowledgments

The authors thank Dr. Mohammad Javed Ali for his contribution in the evaluation and management of this case and for reviewing our manuscript.

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Ocular manifestations of mycoplasma-induced rash and mucositis

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A 13-year-old girl presented with a 5-day history of fever and cough followed by new-onset oral ulcers and conjunctival injection. Clinical examination revealed bilateral 360-degree subconjunctival

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Submitted February 5, 2020.

Revision accepted April 3, 2020.

Published online July 2, 2020.

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J AAPOS 2020;24:249-251.

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1091-8531/\$36.00

<https://doi.org/10.1016/j.jaaapos.2020.04.006>

hemorrhages, which later evolved to corneal epithelial defects, pseudo-membrane formation, and extensive oral mucosal ulceration. *Mycoplasma pneumoniae* serum IgG and IgM were positive. Treatment with topical prednisolone acetate, moxifloxacin, preservative-free artificial tears, and erythromycin ointment was initiated. A self-retaining amniotic membrane was placed. The ocular and oral lesions resolved within 2 weeks of treatment, and the patient's vision returned to baseline. *Mycoplasma*-induced rash and mucositis is a newly defined entity that mainly affects children and has a favorable prognosis with early detection and treatment.

Case Report

A 13-year-old Hispanic girl was admitted to the Pediatrics Service at the University of Oklahoma Health Sciences Center for fever and cough of 5 days' duration followed by new-onset bilateral conjunctival injection, blurry vision, and oral ulceration (Figure 1). She had no significant past medical or ocular history. There were no prior episodes of ocular or oral lesions and no history of trauma. Her two siblings had recently recovered from a similar upper respiratory illness without oral or ocular manifestations. The patient was started on supportive therapy and oral azithromycin for a presumed diagnosis of pneumonia. Twelve-point review of systems was notable for fever, cough, fatigue, loss of appetite, blurry vision, and ocular and oral discomfort.

Visual acuity with pinhole at near was 20/20 in each eye. Pupils were round and reactive, with no relative afferent pupillary defect. Extraocular movements were full, without strabismus or nystagmus. Intraocular pressure was 15 mm Hg in each eye. Anterior examination revealed bilateral 360-degree subconjunctival hemorrhage without follicular or papillary changes; there was no membranous formation. There were short fluorescein-staining strands of mucus adherent to the anterior surface of the cornea and conjunctiva bilaterally. The remainder of the anterior segment evaluation as well as dilated fundus examination were within normal limits. Physical examination was positive for bilateral diffuse wheezing and two erythematous, sub-centimeter targetoid lesions on the right radial palm. A chest radiograph showed bilateral upper lobe alveolar opacity consistent with multifocal infectious process without effusion or pneumothorax. The initial infectious workup was negative for blood culture, group A *Streptococcus* rapid antigen screen, and nasopharyngeal swab PCR testing for adenovirus, coronavirus, human metapneumovirus, rhinovirus, influenza A, influenza B, parainfluenza, respiratory syncytial virus, *Bordetella pertussis*, *Chlamydia pneumoniae*, and *Mycoplasma pneumoniae*. A presumed diagnosis of bilateral viral hemorrhagic conjunctivitis was made, and the patient was started on preservative-free artificial tears and erythromycin ointment.

On day 3 of hospitalization, the patient reported worsening of both ocular and oral pain and decreased



FIG 1. External photographs showing bilateral conjunctival injection (A) and oral ulceration (B) during initial hospitalization.

uncorrected near visual acuity to 20/40 (pinhole 20/20) right eye and 20/800 (pinhole 20/200) left eye. There were new corneal epithelial defects in addition to the previously documented filaments. The inferior 20% of the right cornea was involved, and the left had a larger central and inferior defect, involving 80% of the cornea. No corneal infiltrates were noted. Pseudomembranes were found in the inferior fornices bilaterally and were carefully peeled. Conjunctival swab testing for HSV PCR and coxsackieviruses cultures were sent at this point and were negative. Topical prednisolone acetate 1% four times daily and moxifloxacin 0.5% four times daily were added to the existing treatment regimen. A ProKera (Bio-Tissue, Miami, FL) amniotic membrane was placed over the left eye for 6 days to help with comfort and to aid corneal reepithelization. A repeat infectious workup revealed elevated *Mycoplasma pneumoniae* IgG (1893 U/mL; negative range, <100 U/mL) and IgM (5662 U/mL; negative range, <770 U/mL) serum titers.

The patient reported significant improvement in her ocular symptoms after the amniotic membrane placement. On day 10 of hospitalization, her visual acuity improved to 20/25 in the right eye and 20/30 in the left eye, and corneal epithelial defects had completely resolved without filamentous deposits. The patient was discharged from the hospital on day 13. Two months after the initial hospitalization, the subconjunctival hemorrhage and oral ulceration had completely resolved, and the visual acuity returned to her previous baseline.

Discussion

Mycoplasma pneumoniae is a common cause of upper respiratory infection in children. Up to 94% of the *Mycoplasma*-associated infections may produce extrapulmonary manifestations, which most commonly involve

the mucous membranes (94% oral, 82% ocular, and 63% urogenital mucositis).^{1,2} The term *Mycoplasma-induced rash and mucositis* (MIRM) was first introduced by Canavan and colleagues² in 2015 as a distinct clinical entity to differentiate it from other causes of infectious or medication-related mucocutaneous lesions, such as Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN).

MIRM and SJS/TEN can have similar clinical presentations, namely, mucocutaneous eruptions involving the ocular, oral, and genitourinary mucosal surfaces. However, MIRM differs from SJS/TEN in that the former is more commonly seen in children (mean age, 11.9; male, 66%) and is associated with mucositis alone or prominent mucositis with minimal cutaneous involvement.^{2,3} When the skin is involved, the rash in MIRM is typically sparse and is characterized by vesicubullous or targetoid cutaneous lesions. By contrast, SJS/TEN often presents in adults (mean age, 47.1; female, 66%), with large, widespread, purpuric, coalescing bullous lesions that progress to sloughing and necrosis.²⁻⁴

Initially, our patient's *Mycoplasma* antibody testing was negative. This could be secondary to the temporal profile of disease process, because *Mycoplasma* IgM is typically produced within 1 week of initial infection and peaks at 3-6 weeks.⁵ The patient's otherwise negative infectious workup, along with the atypical oculomucocutaneous findings, warranted a repeat infectious laboratory at 1 week into hospitalization, which yielded highly positive *Mycoplasma pneumoniae* IgG and IgM titers.

Of the reported cases of MIRM in the literature,⁵⁻¹⁰ the mean age of presentation was 21.4 years (range, 8-46), and all cases had conjunctival involvement without corneal involvement except for a patient reported by Santos and colleagues, who treated their patient with ocular occlusion, topical oxytetracycline ointment, and intravenous immunoglobulins at a dosage of 1 g/kg/day for 3 days, with a rapid improvement.⁸ None of the reported cases required amniotic membrane transplant, and all recovered without ocular sequelae except for 1 case with eyelid margin scar affecting the meibomian glands.⁹

There have been no established treatment guidelines for ocular involvement of MIRM; however, aggressive lubrication combined with topical steroids and antibiotics often leads to a complete recovery. In cases that are more severe, amniotic membrane transplantation can afford symptomatic pain relief and aid in visual recovery.

Pediatricians and ophthalmologists should be familiar with this disease entity and consider amniotic membrane transplantation as an additional treatment option when the patient's clinical course worsens while on topical therapy.

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Severe bilateral ankyloblepharon filiforme adnatum

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We present a case of bilateral ankyloblepharon filiforme adnatum in 1-day-old girl and describe our surgical approach. The bands connecting the upper and lower eyelids of both eyes were severed using blunt scissors. Point bleeding at the cut bands stopped in 1-2 minutes, without the need for cauterization or compression. The patient was able to open her eyes shortly

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Submitted February 16, 2020.

Revision accepted April 9, 2020.

Published online July 2, 2020.

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J AAPOS 2020;24:251-252.

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1091-8531/\$36.00

<https://doi.org/10.1016/j.jaapos.2020.04.002>

after the procedure, as she woke up from anesthesia. Examination under general anesthesia showed normal eye examination appropriate for age. Postoperatively, the patient maintained open palpebral fissures. Visual development over 3 years' follow-up was normal.



Case Report

The ophthalmology team at Cairo University Hospitals was consulted to examine a 1-day-old girl who had bilaterally closed eyelids since birth. She was initially thought by her neonatologist to have cryptophthalmos. On examination, both palpebral fissures were completely closed by multiple cutaneous bands at the gray line anterior to the meibomian gland orifices and posterior to the lashes that connected the upper and lower eyelids along the whole width of the palpebral fissure in both eyes, sparing the inner and outer canthi (Figure 1) but preventing the eyelids from opening. The corneas of both eyes could be seen through the slit defects between bands connecting the eyelids and appeared to be intact; both eyes could move without restriction.

The patient underwent urgent surgery under general anesthesia to cut the bands and prevent vision deprivation amblyopia. There was point bleeding from cutting the connecting bands that stopped within 1-2 minutes without need for cauterization or compression. On examination under general anesthesia, both eyes were normal for age. The patient was able to fully open both eyes when she awoke from anesthesia. She was followed for 3 years, with normal visual development.

Surgical Technique

The surgery was performed under general anesthesia. Initially, a single band was cut with a scalpel blade to create a space. Afterward, one blade of blunt Wescott scissors was entered in the conjunctival space (Video 1, available at jaapos.org) with the tip pointed away from the globe to complete the opening. The ankyloblepharon



FIG 1. External photograph showing multiple bands connecting upper and lower lids bilaterally.