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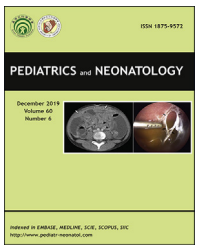

Letter to the Editor

Chlamydia pneumonia – induced mucositis

To the Editor

A 16-year-old healthy male presented to the emergency department with a 5-day history of upper respiratory symptoms, persistent fever, and blisters present within the oral cavity. Two days before presentation, he also developed severe bilateral conjunctivitis with watery discharge. There were no other symptoms such as respiratory distress, skin rash, and genital lesions. He was not sexually active and denied taking any medications recently. His vitals were within normal limits. However, he appeared to be in distress that was secondary to pain. The patient also showed severe oral mucosal involvement, including the lips, tongue, and the palate (Fig. 1). His conjunctivae were injected, and copious mucous discharge was noted. The rest of the physical examination was unremarkable. A complete blood count was performed that showed results within normal limits. Epstein Barr Virus (EBV), Cytomegalovirus (CMV), Herpes Simplex Virus (HSV), and Human Immunodeficiency Virus (HIV) serology results were negative. Chest X-ray revealed a streaky right lower lobe opacity. Respiratory PCR panel showed positive results for *Chlamydia pneumonia*. Genital swabs were negative for *gonococci* and *chlamydia*. The patient's immunoglobulin titers showed high values for *Chlamydia pneumoniae* - IgM $>$ 1:160 (normal range $<$1:10). He was started on IV hydration and topical analgesia to treat the oral pain. When his respiratory panel results began showing positive results, he was started on doxycycline.

The patient also had severe mucositis without a skin rash. Infections caused by *Candida* and viruses such as EBV, CMV, HIV, and HSV can also manifest similar symptoms. In addition, autoimmune conditions such as pemphigus, Systemic Lupus Erythematosus (SLE), and Behcet's disease can present with skin and mucous membrane involvement; however, our patient showed no additional clinical or laboratory evidence indicating any of the abovementioned causes. Due to the presence of extensive mucositis and the lack of cutaneous involvement, the possibility of erythema multiforme (EM) and Stevens–Johnson syndrome (SJS) is less likely but cannot be entirely ruled out. The absence of drug exposure along with a history of a preceding respiratory infection with radiological evidence of pneumonia provided us the clue initially to consider Mycoplasma-induced rash and mucositis (MIRM) as the underlying cause of mucositis in our patient. MIRM is a term that was recently proposed by Canavan et al.[1] in 2015 to differentiate *Mycoplasma pneumoniae*-associated mucocutaneous disease, which has a distinct morphology (predominance of mucosal involvement), a milder disease course, and a better prognosis than SJS. Since the term MIRM has been proposed, it has essentially replaced the older terminologies such as atypical SJS, incomplete SJS, and Mycoplasma-associated mucositis (MPAM). Our case was consistent with the proposed diagnostic criteria of MIRM sine rash ($<$10% BSA of skin involvement, $\geq$2 mucosal sites involved, absence or sparsely present morbilliform skin lesions, and clinical and laboratory evidence of pneumonia).

However, our patient showed negative results for mycoplasma and positive results for *chlamydia*. Unlike MIRM, *chlamydia*-induced mucositis is not a labeled condition, not well known, and believed to be underreported. In a recent review by Mayor-Ibarguren et al.,[2] the authors found 21 reported cases of *C. pneumoniae*-related mucositis/EM/SJS in the medical literature. Interestingly, it has been reported that these cases presented in a similar manner like MIRM with fever and respiratory symptoms and mucous membrane or skin involvement. However, skin involvement was more (90%), with only two cases of *chlamydia*-induced mucositis being reported without any form of cutaneous lesions similar to our patient. The prognosis was surprisingly good as in MIRM, making *chlamydia*-induced mucositis a diagnosis that could be included under the umbrella of MIRM rather than as a part of the EM/SJS spectrum. There are no consensus guidelines for the management of MIRM or *chlamydia*-induced mucositis. Antibiotics aid in improving the pneumonia. Steroids have been demonstrated to be beneficial in some patients in reducing the severity of mucositis.[3] The role of intravenous immunoglobulin (IVIG) is still under debate, and it carries the risk of transfusion reactions and anaphylaxis. In a review by Meyer et al.,[4]

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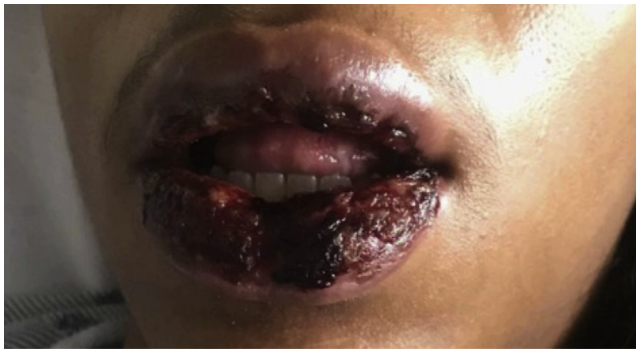

Figure 1 Mucosal breakdown and inflammation seen in labial mucosa.

among 32 confirmed cases of MPAM, 31% showed improvement with corticosteroids and IVIG was used in 9% of cases. Our patient showed good recovery with supportive management without the need for immunosuppression.

Conclusion

Chlamydia-induced mucositis must be considered as a cause of mucositis in children and adolescents, especially when they present with fever and respiratory symptoms accompanied by predominant mucosal involvement. *C. pneumoniae*-induced mucositis should also be included in the spectrum of MIRM as there is no nomenclature at present that includes it as a potential cause of rash and mucositis. The treatment is generally supportive, with the majority of cases showing improvement with fluid and pain management. The role of steroids and IVIG must be standardized in further prospective studies.

Conflicts of interest

The authors have no conflicts of interest relevant to this article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pedneo.2019.06.005.

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