IDCases 28 (2022) e01512

Contents lists available at ScienceDirect

IDCases

journal homepage: www.elsevier.com/locate/idcases

Case illustrated

Erythema multiforme as a presentation of COVID-19: Case Illustrated format

Shahda Mohamed Alhassan Ahmed, Tinuola Olajide, Khalid Mohamed Ibraheem Alhaj Albsheer, Sushil Niraula Danjuma

Department of Medicine, Hamad General Hospital, Doha Qatar

ARTICLE INFO

Keywords:
COVID-19
Erythema multiforme
Rash
SARS COV-2

ABSTRACT

COVID-19 is now an established morbidity across races, regions and clinical risks around the world. From its first detection in Wuhan city-China in 2019 to the recent breakthrough of approved vaccines, that are determinants and deterrents and gradually becoming apparent. The phenotype of its presentation however is both variable and challenging especially. For those presenting with unique skin dermatosis such as erythema multiforme. Case report Our case is on a 36 year- old gentleman who presented to the hospital complaining, initially of only urticarial rash (later established to be erythema multiform), which improved with symptomatic treatment. He was discharged, only to be re-admitted a week later with exacerbation of the former cutaneous manifestation, accompanied by fever and gastrointestinal symptoms. He ultimately made complete recovery and was discharged home.

Introduction

The novel corona virus, which was first been recognized in December 2019 in Wuhan, China and has since become a pandemic with morbidities and mortality across racial, regional and clinical risk boundaries [1]. It is exerting tremendous burden on health systems across the World [1]. There has been growing uncertainty regarding the extent and magnitude of morbidity and mortality associated with CVOID-19 [1]. This is particularly more so with regards to the exact phenotype of skin involvement in patients with the COVID-19 clinical syndrome [2]. What was described as a respiratory illness just a few months back is now showing manifestations affecting different organ systems well beyond the pulmonary architecture [3]. In this case report, we present a case of a 36-year-old gentleman whose initial presentation was an urticarial rash that turned out to be erythema multiform on further assessment on a background of positive COVID syndrome.

Case illustrated format

A 35 years old previously healthy gentleman presented to the ED initially complaining of sudden onset skin rash involving the trunk, upper and lower extremities. The rash which was of varying morphology and pruritic, had an urticarial phenotype with multiform annular weal and central clearing. On further review of history, he denied of any other symptoms, such as respiratory or gastrointestinal symptoms.

He denied history of any contact with the individuals with fever or respiratory symptoms or with patients with confirmed COVID-19 syndrome. His Chest x-ray was reported as normal.

During this visit in the Emergency Department, he was diagnosed as a case of allergy of unknown cause and was prescribed anti-histamine and a short course of Prednisolone and was sent home after good respond.

One week later he re-presented to the Emergency Department, with flare up of his rash despite being on treatment. He also had history of fever since discharge from the hospital with associated abdominal pain and vomiting, but no upper or lower respiratory symptoms.

His temperature in the Emergency Department was 37.8, heart rate of 74/min, respiratory rate 20/min, blood pressure of 129/71 mmHg and oxygen saturation of 98% on room air.

His clinical examination was normal apart from the skin rash (erythematous, solitary, well defined, weal like with central clearing).

His laboratory investigations results showed mild raised AST with result of 61, CRP (46.9) and other blood test were normal including WBC. His chest x-ray was also reported as normal. Virology tests came negative for HIV, HSV.

He was admitted for further evaluation. However, on second day of

Abbreviations: CXR, chest x-ray; ED, emergency department; BP, blood pressure; ALT, alanine transaminase; AST, aspartate transaminase; PCR, Polymerase chain reaction.

https://doi.org/10.1016/j.idcr.2022.e01512
Received 29 September 2021; Received in revised form 12 April 2022; Accepted 16 May 2022
Available online 20 May 2022

admission, he developed productive cough with white sputum. A throat swab for COVID-19 PCR, came back as positive. He had persistent cough throughout his period of quarantine, however both his rash and gastrointestinal symptoms resolved by day 3.

Discussion

Cutaneous manifestations with various phenotypes in patients infected with COVID-19 are becoming more familiar to physicians across the world. Two studies on cutaneous manifestations in 88 COVID-19 infected patients by Recalcati. S et al. [2] and Daneshgaran[4] both reported the point prevalence estimate of this atypical presentation to be about 20.4%. Our case focuses on Erythema multiforme which is a skin dermatosis due to hypersensitivity reaction to infections or drugs that often presents as polymorphous eruption of macules, papules, and typical target lesions particularly at distal extremities with or without mucosal involvement. The most common causative agent is HSV but other causative agents such as adenovirus, CMV, HIV have also been reported. [5] This is believed to be a rare less documented phenotype with prevalence of 3.7% in the report from Daneshgaran et al. [4] and 9.7% according to a sub-analysis by Català et al. [6] of the 20.4% prevalence of the dermatological manifestation of the syndrome.

Additionally, we reviewed 16 other published articles (12 case reports [7–18] 1 systemic review [19] 1 evidence-based review [4] and 2 case series [20,21]) specifically on EM manifestation in patients infected with COVID-19. Our synthesis revealed that the EM cutaneous phenotype was mostly seen in the extremities of age or predominantly as a side effect of treatment [10,12,15,17]. For example, women aged between 50 and 70 years and children aged between 13 and 17 years were shown to have the highest prevalence of manifestation. Some cases also showed that treatment with hydroxychloroquine[13,14,18] specifically was associated with the eruptions of erythema multiforme in patients treated for COVID19. Another case report showed Erythema Multiforme with multiple mucosal involvement [11] in a male of 57 yrs.

In all of these cases EM was not the initial manifestation, rather presented later in the course of the disease. We only found one case report by Gargiulo et al. [16], on erythema multiforme manifesting as an initial presentation of COVID-19, but in a 72 yrs female patient with severe disease that lead to death despite treatment.

We believe that our case is unique and brings new insight towards increasing clinical suspicion of COVID-19 in adult male patients below the age of 40 yr, presenting initially with mild erythema multiforme typical target lesion as the only complaint, treated using symptomatic therapy with antihistamine, only to present a week later with fever and GIT symptoms.

All of his symptoms preceded the mild course of lower respiratory symptoms (ten days after the eruption of EM rash). The patient was only a 35 yrs old male, with initial presentation of EM predominately on the trunk and upper extremities and had a past medical history of chronic urticaria which lead to misdiagnosis of his case initially.

Hence, we would like to raise the importance of high suspicion index for SARS-COV-2 in patients presenting with EM like rash as an isolated symptom especially in patients with past medical history of chronic skin conditions, as this could lead to misdiagnosis and delay of management.

More literature is however needed to further investigate this phenomenon, especially its association with the severity of COVID-19.

Conclusion

Although most of the COVID 19 patients have typical presentation of fever with upper or lower respiratory tract symptoms, some of them could also present with atypical presentation of different manifestations [3]. The initial atypical dermatological presentation and especially the flare up of their previous condition could me misleading in the initial investigation and diagnosis of the COVID 19 as our case. It is therefore recommended that in a high prevalence area, the flare up of any previous dermatological manifestation will be worth screening for the COVID 19 or if not screened at that time, at least keep them in close follow up so that there is no delay in diagnosing later.

Ethical approval

Research is approved by the hospital ethical committe.

Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has consent for his 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.

Financial support and sponsorship

Nil.

CRediT authorship contribution statement

Shahda Mohamed Alahsan: Manuscript writing and literature review. Tinuola Olajide: literature review. Khalid Albsheer: Discussion Danjuma: acknowledgment. Sushil Niraula: supervision.

Acknowledgment

Mohammed Ibn-Mas'ud Danjuma.

Conflicts interest

There are no conflicts of interest.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.idcr.2022.e01512.

References

[1] Cucinotta D, Vanelli M. WHO declares COVID-19 a pandemic. Acta Biomed 2020; 91(1):157–60.
[2] Recalcati S. Cutaneous manifestations in COVID-19: a first perspective. J Eur Acad Dermatol Venereol 2020;34(5):e212–3.
[3] Philips CA, et al. One disease, many faces-typical and atypical presentations of SARS-CoV-2 infection-related COVID-19 disease. World J Clin Cases 2020;8(18): 3956–70.
[4] Daneshgaran G, Dubin DP, Gould DJ. Cutaneous manifestations of COVID-19: an evidence-based review. Am J Clin Dermatol 2020;21(5):627–39.
[5] Trayes KP, Love G, Studdiford JS. Erythema multiforme: recognition and management. Am Fam Physician 2019;100(2):82–8.
[6] Català A, et al. Maculopapular eruptions associated to COVID-19: a subanalysis of the COVID-Piel study. Dermatol Ther 2020:e14170.
[7] Demirbas A, et al. A case of erythema multiforme major in a patient with COVID 19: the role of corticosteroid treatment. Dermatol Ther 2020:e13899.
[8] Reguero-Del Cura L, et al. Onset of erythema multiforme-like lesions in association with recurrence of symptoms of COVID-19 infection in an elderly woman. Dermatol Ther 2020:e14208.
[9] Sánchez-Velázquez A, Falkenhain D, Rivera Díaz R. Erythema multiforme in the context of SARS-Coronavirus-2 infection. Med Clin 2020;155(3):141.
[10] Bapst T, et al. Special dermatological presentation of paediatric multisystem inflammatory syndrome related to COVID-19: erythema multiforme. BMJ Case Rep 2020;13(6).
[11] Binois R, et al. A case of erythema multiforme major with multiple mucosal involvements in COVID-19 infection. Int J Dermatol 2021;60(1):117–8.
[12] Janah H, Zinebi A, Elbenaye J. Atypical erythema multiforme palmar plaques lesions due to Sars-Cov-2. J Eur Acad Dermatol Venereol 2020;34(8):e373–5.
[13] Monte Serrano J, et al. Hydroxychloroquine-induced erythema multiforme in a patient with COVID-19. Med Clin 2020;155(5):231.
[14] Robustelli Test E, et al. Acute generalized exanthematous pustulosis with erythema multiforme-like lesions induced by Hydroxychloroquine in a woman with

coronavirus disease 2019 (COVID-19). J Eur Acad Dermatol Venereol 2020;34(9):e457–9.
[15] Labé P, et al. Erythema multiforme and Kawasaki disease associated with COVID-19 infection in children. J Eur Acad Dermatol Venereol 2020;34(10):e539–41.
[16] Gargiulo L, et al. A fatal case of COVID-19 infection presenting with an erythema multiforme-like eruption and fever. Dermatol Ther 2020;33(4):e13779.
[17] Torrelo A, et al. Erythema multiforme-like lesions in children and COVID-19. Pedia Dermatol 2020;37(3):442–6.
[18] Jimenez-Cauhe J, et al. Erythema multiforme-like eruption in patients with COVID-19 infection: clinical and histological findings. Clin Exp Dermatol 2020;45(7):892–5.
[19] Conforti C, et al. Cutaneous manifestations in confirmed COVID-19 patients: a systematic review. Biology 2020;9(12).
[20] Tomsitz D, Biedermann T, Brockow K. Skin manifestations reported in association with COVID-19 infection. J Dtsch Dermatol Ges 2020.
[21] Mawhirt SL, Frankel D, Diaz AM. Cutaneous manifestations in adult patients with COVID-19 and dermatologic conditions related to the COVID-19 pandemic in health care workers. Curr Allergy Asthma Rep 2020;20(12):75.