Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 8
Open Access

Erythema multiforme: A case report with oral manifestations

Nour Qawasmeh*
*Palestine Polytechnic University, School of Dentistry, Hebron, West Bank, Palestine

Cite this paper as: Nour Qawasmeh (2024) Erythema multiforme: A case report with oral manifestations. Frontiers in Health Informa .4395-4400

ABSTRACT;
Erythema multiforme (EM) is an acute, immune-mediated mucocutaneous disease, which may be related to herpes simplex virus, use of certain medications, autoimmune disease, radiation, immunization, pregnancy, period, and food additives or chemicals. It is a condition that occurs predominantly in young adults, with a slight female preponderance and no predilection. Clinically, EM presents erosive and erythematous plaques, affecting mainly the lips and oral mucosa, called target lesions, which may progress to vesiculobullous lesions. The aim of this presentation is to report a case shown as a positive response to treatment.

Keywords; *Autoimmune disease, Corticoid therapy, Erythema multiforme, Oral manifestation*

Erythema multiforme (EM) is an acute, immune-mediated dermatological condition affecting the skin and mucous membranes. It develops as a type IV hypersensitivity reaction to infections, medications, or other stimuli. [1]The clinical presentation with target lesions and/or mucosal erosions with a history of exposure to a known trigger is usually sufficient for the diagnosis. Albeit self-limited in most cases, severe or recurrent forms of EM require systemic therapy.[2]

EM was first described by Hebra in 1866 in his atlas of skin diseases (Erythema Exudativum Multiforme typus benignus Hebra). For many years, it was considered a variant from a continuous spectrum comprising EM, Stevens-Johnson syndrome (SJS), and toxic epidermal necrolysis (TEN).[4] Studying an extensive number of cases allowed for a more precise understanding of these diseases and their evidence-based distinction as separate entities.[1-4]

The exact incidence of EM is not known, but is estimated to be between 0.01% and 1%. Young adults are most affected with a slight male predominance. EM before the age of 3 and after the age of 50 is exceedingly rare. Higher risk of EM was suggested in patients with HIV infection, bone marrow transplant, systemic lupus erythematosus (SLE), graft-versus-host disease (GVHD), and inflammatory bowel disease (IBD), as well as in patients on corticosteroid treatment, chemotherapy, or radiotherapy.[1-5]

The most common triggering factor for EM is infection with human herpesvirus (HSV). Other infectious agents and medications have been implicated as well. Nevertheless, about 50% of cases remain idiopathic with no identifiable etiologic factor.[2-5]

Erythema multiforme (EM) is an acute, selflimited, inflammatory mucocutaneous disease that manifests on skin and often oral mucosa, although other mucosal surfaces such as the genitalia, may also be involved. EM is considered to be a hypersensitivity reaction, and the most common inciting factor is infection, particularly with HSV. Drug reactions to NSAIDS, anticonvulsants or other drugs play a smaller role. It is of four types, EM minor and EM major, steven jhonson syndrome and toxic epidermal necrolysis. EM generally affects 20-40 years age group, with 20% occurring in children. There may be prodrome of fever, malaise, headache, sore throat,

rhinorrhea and cough. The classic skin lesion consist of a central blister or necrosis with concentric rings of variable color around it called typical “target” or “iris” lesion that is pathognomonic of EM. [1-6]

The aim of this presentation is to report a case shown as a positive response to treatment.

Figure1: Clinical manifestation of recurrent erythema multiforme before treatment,Shows lip lesions on the day patient reported. Note the vesicle oncutaneous part of lower lip.

CASE REPORT;

This is a case of EM in a 17-year-old female patient with a recurrent erosions and ulcers on the lower lip. The clinical presentation showed Widespread erosions, ulcerations, erythema on face, legs, arms, hands (palmar, dorsal)., crusts, erosions, and erythema on upper and lower lips, erosions, ulcerations, erythema on upper and lower labial mucosa. The histopathological analysis of this type of lesion is essential for the diagnosis of the lesion. In this way, we can rule out differential diagnoses, especially pemphigus vulgaris and in children, hands, feet, and mouths disease. **Figure1,2** In this work, it was observed how important the histopathological analysis is necessary in more complex cases, because in this way the therapeutic approach was effective. **Figure3**

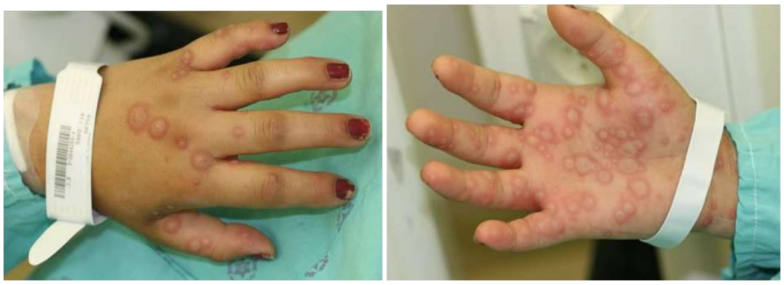

Figure 2: Photograph of the hands of a 17-year-old female patient showing classic lesions of erythema multiforme manifesting a targetoid appearance with quasi-vesiculation, distributed on the dorsal aspects of both hands.

DISCUSSION:

EM is considered to be acute mucocutaneous hypersensitivity disorder. It is characterized by skin eruptions with or without oral or other mucous membrane lesions. It commonly affects young adults of 20-40 years of age and nearly 20% occur in children. It is more common in females than males. In 70% of cases they have a history of preceding herpes simplex infection. It begins as an acute lesion with or without prodromal symptoms.[1-7] Patient experiences fever, lymphadenopathy, malaise, headache, cough, sorethroat, polyarthralgia, a week before onset of surface erythema or blisters . Lesions develop as irregular red macules, papules, vesicles that collapse and gradually increase to form plaques on skin. Skin lesions have a characteristic bulls eye appearance. Oral lesions are referred to as atypical targets. It usually occurs as erythematous macules on lips and buccal mucosa followed by epithelial necrosis, bullae and ulceration with an irregular outline and an erythematous halo. Lip lesions are

associated with encrustations. EM is of five major types. They are EM minor, EM major, steven Johnson syndrome, toxic epidermal necrolysis and overlap syndrome . Herpes associated EM (HAEM) is the kind of EM that is caused by preceding HSV infection. HSV 1 and 2 have known to precipitate EM.[1-9]

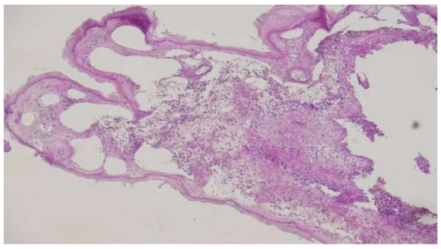

Figure 3: Presence of epithelium with spongiosis presence of intraepithelial cleft, in the tissue there may be an inflammatory infiltrate with the presence of neutrophils and plasma cells.

HSV1 DNA has been found in about 60% of patients clinically diagnosed with recurrent HAEM and 50% of patients with recurrent idiopathic EM by polymerase chain reaction.[6-8]

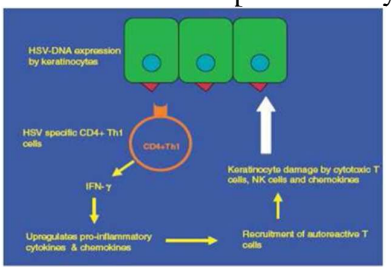

Figure4: Pathogenesis of Erythema Multiforme.

Drug-related EM comprises less than 10% of all cases. Multiple drugs and substances can precipitate EM, the most common being nonsteroidal anti-inflammatory agents, sulfonamides, antiepileptics, and antibiotics.[1-7] Newer agents, such as biologics (sunitinib, infliximab, secukinumab, mogazolimumab, etc.), as well as over-the counter preparations, such as weight loss pills and herbal medicines, can also trigger EM. Various vaccines, including the human papillomavirus vaccines and the small pox vaccine, have been associated with EM with some patients showing similar skin changes after various vaccines. Vaccination is also a common trigger in infants.[3-9] **Figure4**

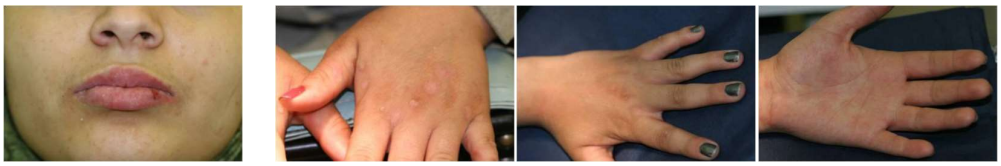

Figure 5. *The lesions were healed completely and no recurrence after the follow up for 6 months.*

Topical medications, such as imiquimod 5% cream, are also known to induce EM or EM-like reactions.
Early EM presents with oval to round erythematous edematous macules or papules that expand gradually over a period of 24–48 h. During the first few days, the initial lesions develop a raised, pale, and edematous peripheral ring, surrounded by a second cyanotic or violaceous

ring, thus forming the typical concentric, "target" lesion . The central area of the target lesion represents necrosis of the tissue and may appear clinically as a dusty red area or blister . As the disease evolves, the lesions may form polycyclic, geographic, or annular configurations. Residual post-inflammatory hyperpigmentation or hypopigmentation may develop thereafter.[7-10]

EM major usually has a protracted course, and resolution may take up to 6 weeks. It is associated with higher morbidity, primarily due to the pain and functional impairment with poor oral and fluid intake. Dehydration may result from the impeded fluid intake, diarrhea from bowel mucosal involvement, increased sweating due to elevated body temperature, and evaporation through denuded areas of skin. Rare serious complications include conjunctival scarring and permanent visual loss in ocular involvement, genital synechiae, esophageal strictures, and upper airway erosions leading to pneumonia.[8-11]

The important points in the clinical history include acute presentation with episodic and self-limiting course, temporal association with infec tions, and use of new medications. The typical clinical presentation includes target lesions in mainly acral distribution with or without mucosal involvement. There are no laboratory tests that confirm or refute the diagnosis. In severe cases, an array of nonspecific findings, such as elevated ESR, leukocytosis, thrombocytopenia, and mild anemia, may be expected. Electrolyte disturbance can also develop due to dehydration.[3-7]

In typical EM, the clinical presentation and history are usually sufficient for a straightforward diagnosis. Nevertheless, it is important to exclude other possible diseases that can resemble EM, but have a more serious prognosis. Mimickers of EM include SJS, fixed drug eruption, vasculitis, bullous pemphigoid, paraneoplastic pemphigus, Behcet's disease, Rowell's syndrome, polymorphous light eruption, secondary syphilis, and Sweet's syndrome. *SJS* is a distinct entity with similar mucosal lesions, but a different pattern of cutaneous involvement. In SJS, the eruption is usually widespread and comprises erythematous or purpuric macules or flat atypical targetoid lesions. Acral predominance is not a feature. Medications are the main culprit for SJS.[6-9] Timely diagnosis of SJS is essential as it may have function-threatening and life-threatening complications and may progress to toxic epidermal necrolysis. *Immunobullous disorders* usually have insidious onset and protracted, chronic course. DIF is positive with a characteristic histological presentation.[8-11]

According to the histopathology of the established lesions being characterized by dermatitis of vacuolar interface with basocellular degeneration and epidermal dysceratosis. Another main characteristic independent of localization is the presence of superficial perivascular lymphocytic infiltrate with rare eosinophils or neutrophils. Therefore, the administration of corticosteroids is the most widely used drugs in the treatment containing the acute symptomatology of the case [1, 4, 5].

The management strategy for a patient with EM depends on the type, severity, site of involvement, and triggering factors, with special consideration for underlying conditions or age. The cause for EM should be identified when possible. If a drug is suspected as the inciting stimulus, it should be discontinued as soon as possible and reexposure to the same drug or to drugs with possible cross-reactivity due to similar chemical structures should be avoided.[11-13] This includes all drugs and herbal supplements introduced within 2 months prior to the presentation. Suspected or known preceding infections should be treated accordingly after confirmatory cultures and/or serologic tests.

The treatment objectives for acute EM are to reduce the time to complete resolution and to prevent complications, and for chronic EM, to prevent new flares or to reduce their frequency and severity.

Symptomatic therapy should be the mainstay in every patient with EM.[13,14] This includes

oral antihistamines, analgesics, local skin care, and soothing mouthwashes. Mild EM is usually self-limited, and specific treatment is not required, unless recurrent or persistent. In severe cases of EM major, though, appropriate therapeutic and prophylactic measures are indispensable. Local supportive care for anogenital, upper respiratory tract, and ocular involvement is paramount to prevent serious complications.[12-15] **Figure5**

CONCLUSION:

Effective care of drug-induced oral EM requires differentiation from other oral ulcerative lesions, which is not common. For an early diagnosis, a thorough history taking and clinical examination are crucial.Since the majority of these cases go unreported because of patient ignorance and self-medication that results in serious adverse drug reactions, it is crucial that healthcare providers disclose these events in order to raise public awareness and sensitize people to the need of using pharmaceuticals responsibly. Prescriber and patient knowledge, coupled with a strong ADR monitoring system that includes a feedback mechanism, can greatly improve the identification, prevention, and treatment of these diseases.

REFERENCES:

1. Sokumbi O, Wetter DA. Clinical features, diagnosis, and treatment of erythema multiforme: A review for the practicing dermatologist. Int J Dermatol 2012;51(8):889–902.
2. Rakhi I, Prabhu N. Etiopathogenesis of erythema multiforme – A concise review. Adv Dent & Oral Health 2017;5(4):555669.
3. Paulino L, Hamblin DJ, Osondu N, Amini R. Variants of erythema multiforme: A case report and literature review. Cureus 2018;10(10):e3459.
4. Vissing MB, Bhasin A, Sluzevich J. The role and histopathology of oral drug challenge in the evaluation of fixed drug eruptions. J Cutan Immunol Allergy 2021;4(5):120–2.
5. Soares A, Sokumbi O. Recent updates in the treatment of erythema multiforme. Medicina (Kaunas) 2021;57(9):921.
6. Osterne RL, Matos Brito RG, Pacheco IA, Alves AP,Sousa FB. Management of erythema multiforme associated with recurrent herpes infection: a case report. J Can Dent Assoc. 2009 Oct;75(8):597-601. PMID:19840503.
7. Trayes KP, Love G, Studdiford JS. Erythema Multiforme: Recognition and Management. Am Fam Physician. 2019 Jul 15;100(2):82-88. PMID: 31305041.
8. Bennardo L, Nisticò SP, Dastoli S, Provenzano E, Napolitano M, Silvestri M, Passante M, Patruno C. Erythema Multiforme and COVID-19: What Do We Know? Medicina (Kaunas). 2021 Aug 16;57(8):828. doi: 10.3390/medicina57080828. PMID: 34441034; PMCID: PMC8401222
9. Rizo-Potau D, Marti-Marti I, Fustà-Novell X. Erythema multiforme. Med Clin (Barc). 2021 May 21;156(10):533. English, Spanish. doi: 10.1016/j.medcli.2020.04.063. Epub 2020 Sep 18. PMID: 32951886.
10. Lamoreux MR, Sternbach MR, Hsu WT. Erythema multiforme. Am Fam Physician. 2006 Dec 1;74(11):1883-8. PMID: 17168345
11. Goldman RD. Erythema multiforme in children. Can Fam Physician. 2022 Jul;68(7):507-508. doi: 10.46747/cfp.6807507. PMID: 35831090; PMCID: PMC9842139
12. Felix MMR, Kuschnir FC, Boechat JL, Castells M. Recent findings on drug hypersensitivity in children. Front Allergy. 2024 Feb 7;5:1330517. doi: 10.3389/falgy.2024.1330517. PMID: 38384771; PMCID: PMC10879301.
13. Samim F, Auluck A, Zed C, Williams PM. Erythema multiforme: a review of epidemiology, pathogenesis, clinical features, and treatment. Dent Clin North Am. 2013 Oct;57(4):583-96. doi: 10.1016/j.cden.2013.07.001. PMID: 24034067.
14. Abduelmula A, Mufti A, Ho JSS, Kashetsky N, Yeung J, Maibach HI. Erythema Multiforme-Like Contact Dermatitis: A Systematic Review of Characteristics and Treatment Outcomes.

Dermatitis. 2021 Nov-Dec 01;32(6):e161-e165. doi: 10.1097/DER.0000000000000761. PMID: 34120131.

15. Wolff K, Goldsmith L, Katz S, Gilchrest B, Paller A, Leffell D: Fitzpatrick's Dermatology in General Medicine. McGraw-Hill, New York; 2008. 10.1001/jama.299.10.1195-b