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Case Report
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Treponema Pallidum and Erythema Multiforme: A Case Report

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Abstract

Erythema Multiforme is a self-limited disease that often results from cytotoxic reactions against various aetiological factors including most commonly infectious agents and rarely medications. It is often necessary to obtain pathological confirmation to distinguish EM from a variety of other diseases that may manifest targetoid lesions. Syphilis is one of those diseases that has variable clinical presentations. Syphilis and EM are relatively common diseases, but EM associated with syphilis seems to be quite rare. We present here a case with such association.

Keywords: Erythema Multiforme; Treponema Pallidum; Edema; Macules; Papules; Syphilis

Case Report

A 35-year-old man presented to the Emergency Department with a 10-day history of fever episodes and pruritic skin rashes all over the trunk and extremities. He also had difficulties in drinking and eating foods because of some painful lesions on the mouth. On physical examination, there were numerous erythematous macules and papules 1–4 mm in diameter, localized on the trunk and superior extremities. Annular erythematous lesions with central hyperpigmentation and erosion were seen on both palms. Painful erosive elements with fibrinous deposits were noted on the oral mucosa. There was also a cicatricial lesion in the penis that made us think it was a syphilis ulcer. He denied treatment with any other new medications and had no other medical problems. Based on these clinical features, the first suspected diagnosis was Erythema Multiforme.

On the laboratory work-up, a complete blood count was within normal levels. Tests of liver function were normal, as were serum creatinine and electrolyte levels. Serologic tests for hepatitis B and C viruses were negative, as were tests for HIV infection. Serologic tests for recent or past infections by herpes simplex virus (HSV), cytomegalovirus (CMV), and toxoplasma were also negative. Instead, a venereal disease research laboratory (VDRL) test was positive with a titer of 1:240 and the fluorescent treponemal antibody absorption test IgM and T. pallidum hemagglutination assay (TPHA) were reactive.

Skin specimens were also taken from two lesion sites: one from a lightly scaly erythematous macule on the trunk and the other one from an erosive lesion on the oral mucosa (Figure 1).

Histopathologic examination of the oral lesion showed an intracellular edema in the epithelium and acanthosis of the spinous layer; and edema of the upper portion of the lamina propria with perivascular infiltrate of mononuclear cells, features that indicated mucosal Erythema Multifrome. The trunk biopsy showed psoriasiform dermatitis with infiltration of lymphocytes and neutrophils in the epidermis and papillary dermis without necrotic keratinocytes, features compatible with Secondary Syphilis (Figures 2 & 3).

After this clinicopathological correlation, the patient was diagnosed with Erythema Multiforme caused by Treponema Pallidum. He was treated with Benzathine Penicillin G 2.4 million units by intramuscular injection in a single dose. 30 minutes before the injection of Penicillin in a way to minimize the severity scale of Herxheimer reaction we treated the patient with Prednisolone 25 mg intramuscular.

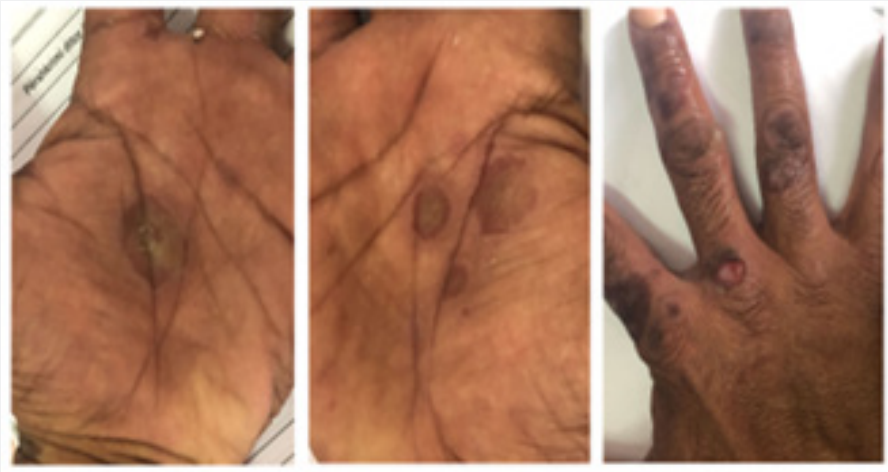

Figure 1: Atypical targetoid lesions with central hyperpigmentation, desquamation, and erosion in both palms.

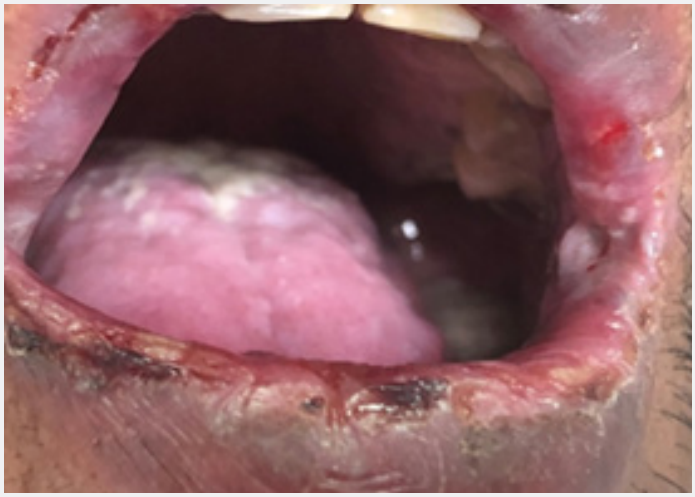

Figure 2: Painful erosive lesions on oral mucosa.

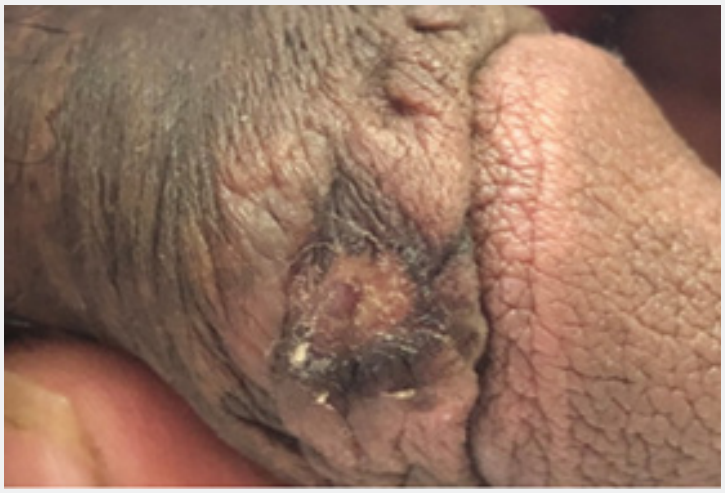

Figure 3: Genital ulcer recovered, an element that orientated us for the Syphilis.

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After the medication patient was then followed-up by repeating the VDRL test at 3- 6 and 12-month intervals. He gradually recovered from his fever episodes, fatigue, and skin lesions. During the follow up our patient did not have any recurrent episode.

Discussion

Erythema Multiforme is considered a self-limited disease that often results from cytotoxic reactions against various aetiological factors. These include infections, medications, malignancy, autoimmune diseases, radiation, and immunization. Infectious agents are the most common cause of EM, especially Herpes Simplex Virus [1]. But in our patient, there was no HSV cutaneous lesion or history of past HSV infection. The serology test for HSV were negative. Treponema Pallidum, on the other hand, is a rare aetiological factor of Erythema Multiforme. In fact, the dermatological manifestations of secondary syphilis can be particularly challenging, with eruptions that resemble those caused by Erythema Multiforme [2].

In this report, we present a pathology-confirmed case of Erythema Multiforme in a patient with serology and pathology confirmed syphilis. Syphilis-related EM-like lesions seems to be quite rare as there are only few cases reported in the literature. From these cases, only 3 of them involved immunocompetent patients, like in our case. The association of EM and Syphilis in these cases were confirmed by VDRL titers of 1:32 or higher or positive demonstration of spirochete microorganisms by IHC stain or PCR study, respectively [3-5]. Other cases of reported EM-like lesions in syphilis involved immunocompromised patients by HIV coinfection [6-9].

The mechanism involved in Treponema Pallidum induced EM is still unclear, but it might be due to an immune reaction to Treponema Pallidum [2]. PCR analysis of secondary syphilis skin lesions reveals Treponema pallidum presence, as well as numerous infiltrating T cells and macrophages, supporting the concept that the lesions are caused by direct spirochete invasion. Thus, EM-like targetoid lesions may result from a specific immune response against Treponema pallidum, which may play a role in their pathogenesis [10]. It is important to demonstrate the connection between the two diseases. Therefore, skin biopsy and special staining are necessary to confirm the diagnosis of Treponema Pallidum Induced-Erythema Multiforme. A PCR-based study that detected Treponema Pallidum in EM-like bullous targetoid lesions observed in early congenital syphilis was reported by Wu et al. [9] According to Lee & Lee, in a 37-year-old woman with secondary syphilis who developed EM-like targetoid lesions on both forearms and palms, immunoperoxidase staining was used to demonstrate spiral Treponema Pallidum in the epidermis and around the dermal blood vessels. Chiang, Mei-Chun et al. demonstrated the causative relationship between spirochetes and EM lesions, by histopathologic examination and immunohistochemical study with an anti-spirochete antibody, which showed intraepidermal spirochetes in vacuolar degeneration.

In our case, we couldn't perform special staining like IHC or PCR study to detect the spirochetes, but we did confirm the diagnosis by histopathologic examination which showed typical features of both diseases, and positive serologic VDRL tests for syphilis.

Conclusion

In conclusion, this case illustrates how Erythema Multiforme, and Secondary Syphilis can coexist and cause confusion between the two diseases. A differential diagnosis of Syphilis should be considered in patients presenting with clinical findings consistent with Erythema Multiforme.

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