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A rare case of Stevens - Johnson syndrome induced by the use of cosmetic products and recent infection of varicella: A case report

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Abstract

Stevens - Johnson Syndrome (SJS) is a skin and mucous membrane disorder that affects less than 10% of the body's skin area, causing the skin to slough off. SJS has very high morbidity and mortality if the patient does not receive instant treatment. According to articles, SJS and SJS-TEN (Toxic Epidermal Necrolysis) overlap and have mortality rates of 24.4% and 21.1% respectively [1]. In this case, a 35-year-old female presented to the emergency department with complaints of skin rashes and painful blisters over face and bilateral upper extremities. She had a prominent history of facial makeup and application of henna over both hands, which was done three days before the initial symptoms appeared. Subsequently, she developed skin sloughing and was eventually diagnosed with SJS. She was admitted to the medical ward for detailed evaluation and treatment. Supportive treatment and steroids were administered. Past medical history and laboratory workup did not identify any common causative agents. Exploring and understanding the causes of SJS is essential so that the disease can be identified early and treated properly, as it can be life-threatening.

Keywords: Steven-johnson syndrome; Cosmetics; Varicella; Henna.

Introduction

Stevens-Johnson Syndrome (SJS) and toxic epidermal necrolysis are acute, rare, and potentially fatal skin reactions involving the loss of skin and, in some cases, mucosal membranes, accompanied by systemic symptoms [2]. Although different etiologies, such as malignancies, and bacterial and viral infection, have been implicated as potential causes of SJS, drugs are the predominant inciting agents. The most common drugs that can cause SJS include sulfa derivatives, antiepileptics, allopurinol, nonsteroidal anti-inflammatory drugs, penicillin-related and cephalosporin antibiotics, and terbinafine [3]. One study reported that antibiotics were suspected in 21.2% of cases, followed by anticonvulsants at 18.9%, nonsteroidal anti-inflammatory drugs at 11.8%, allopurinol at 11.3%, and sulfonamides at 10.4% [4]. However, we identified an unusual and very rare cause of Stevens-Johnson syndrome in our patient, which was facial cosmetic makeup and henna application on forearms with a recent history of chickenpox infection.

Case presentation

A 35-year-old female with a recent past medical history of chickenpox presented to the trauma and emergency department of a tertiary care hospital with complaints of diffuse rash and sloughing of the skin over bilateral hands and over face which started one day ago at home. She complained of swollen eyes and ulceration over her lips for three days. She also had excessive lacrimation.

On presentation, she was afebrile, hemodynamically stable, and oriented to time, place, and person. There were diffuse exfoliative lesions on the face, anterior aspect of the neck, and anterior aspect of both forearms upon examination. The lesions were painful, non-necrotizing, and hot to the touch. Her lips were edematous, and the oral cavity had multiple mucosal ulcers. The mouth opening was restricted to one finger width only. She did not complain of nausea, vomiting, chest pain, headache, shortness of breath, diarrhea, muscular pain, or burning urination.

Upon further questioning, she mentioned applying facial cosmetic makeup one days before her symptoms started. She also applied henna on both of her forearms. Interestingly, the locations of the makeup and henna applications exactly matched where she developed skin lesions. She was diagnosed with varicella (chickenpox) 15 days ago, during which she had few papules and vesicles that resolved over 10 days. She did not take any medications to treat chickenpox.

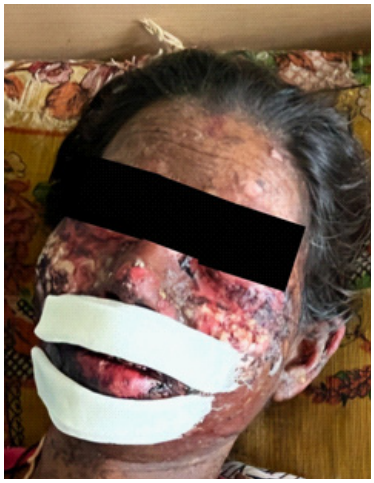

Figure 1: Diffuse exfoliative lesion over face when came to ER.

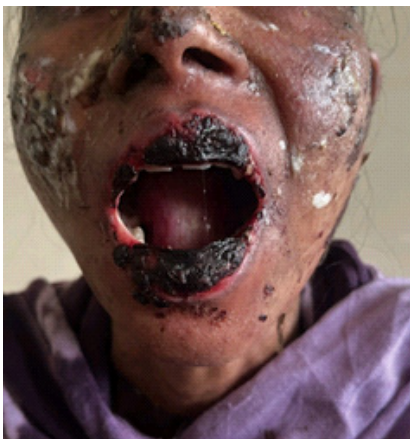

Figure 1: Lesion over face after one week of treatment.

After a thorough examination, Stevens-Johnson syndrome was suspected. She had not been on any medications such as allopurinol, antibiotics, anticonvulsants, corticosteroids, dapsone, modafinil, nevirapine, NSAIDs, indinavir, or herbal medications. There were no recent bacterial infections such as brucellosis, diphtheria, pneumonia, or tuberculosis, nor viral infections such as coxsackievirus, cytomegalovirus, Epstein-Barr virus, hepatitis, herpes, HIV, influenza, mumps, or shingles. She had no history of seizures and no recent travel history.

She may have developed Stevens-Johnson syndrome due to a primary varicella infection, which is a very rare cause of SJS. Additionally, she had skin lesions at the same sites where she had applied makeup and henna. This case might represent a combination of varicella-zoster infection and SJS induced by cosmetic use.

She was admitted to the medical wards for further management and treatment. Supportive care was initiated. Her skin was gently cleansed with diluted chlorhexidine at each wound. Nonadherent, noncrystalline gauze containing silver and biosynthetic materials was used for primary dressing. Heated-air body warmers were employed to prevent heat loss and hypothermia. Due to oral involvement, she was placed on a nutritional supplemental diet of 20-25 kcal/kg per day. She was experiencing mild pain, so ibuprofen was administered. During hospitalization, she received dexamethasone 2 mg IV every 12 hours for 10 days, followed by oral prednisone upon discharge. Prophylactic vancomycin and cefepime were initiated. Benzocaine gel was prescribed for pain related to oral ulcers. If symptoms did not resolve, IVIG therapy was considered.

Routine blood investigations revealed that the patient was anemic, and CRP levels were elevated. However, liver function tests, renal function tests, and blood sugar levels showed no abnormalities. The urinalysis was normal, and the chest X-ray was clear. Blood culture specimens from the lesions showed no microbial growth, and PCR tests did not isolate any viruses. The patient was examined by an ophthalmologist, who reported no ocular abnormalities other than periorbital edema. Moxifloxacin eye drops were prescribed for infection prophylaxis.

The patient's condition gradually improved over two weeks, and she was discharged from the hospital. The lesions on her face and mouth had significantly resolved during that time, and she was feeling better at the time of discharge.

Discussion

Stevens-Johnson syndrome (SJS) and Toxic Epidermal Necrolysis (TEN) are rare, severe immune reactions differing only in the extent of body surface involvement [5]. If skin involvement is <10%, it is SJS; 10-30% is SJS/TEN overlap, and >30% is called toxic epidermal necrolysis. Drugs such as anticonvulsants, antibiotics, and analgesics are leading etiological factors, with around 80% of TEN cases being associated with drug exposure. However, the etiology in SJS cases is often less clear, with only ~50% of cases associated with drug exposure, highlighting the unique etiology of our case [5].

SJS is primarily a clinical diagnosis that requires prompt action due to high mortality rates, ranging up to ~25%, with an even poorer prognosis in cases with unestablished causes compared to identifiable drug causes [6]. Clinical manifestations of the disease become evident within a week of exposure to the causative agent, resulting in fever and arthralgia followed by widespread 'target lesions' over the body. Mucous membranes are almost always involved, and the Nikolsky sign is usually positive [7]. Withdrawal of the offending drug or agent is the cornerstone of SJS management. Our case was treated conser-

vatively with intravenous corticosteroids along with fluid and electrolyte administration. She received an interdisciplinary approach to management with regular ophthalmic and oral care, daily dressings, and broad-spectrum antibiotics. The patient was discharged on on day 15, following the usual course of the disease, without any residual sequelae.

Cosmetics, including makeup, hair, skincare, and personal hygiene products, often contain a variety of ingredients that can cause allergic reactions in certain people. These reactions can range from mild irritation to severe hypersensitivity immune syndromes such as SJS/TEN. These ingredients can include preservatives, fragrances, dyes, and heavy metals such as lead and arsenic [8]. Although pneumonia and encephalitis are more common complications of varicella, there are few reported cases of SJS following a primary varicella infection [9]. As our patient has a recent history of varicella (chickenpox) prior to the development of her symptoms, primary varicella infection can be a contributing factor and cannot be completely ruled out as an etiological cause of SJS in our case. There are some reports in the medical literature describing SJS due to agricultural chemicals [10], chemical hair relaxers [11], and cosmetic creams [7].

Conclusion

SJS is a rare skin and mucous membrane disease triggered by various agents. Our case adds to this rare etiology of the disease and highlights the importance of detailed history-taking to accurately capture the patient's past history, especially considering the widespread availability and use of cosmetic products in our day-to-day life. Prompt discontinuation of the offending agent and timely treatment are necessary, as the disease has a high mortality rate.

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