Cannabinoid-Induced Stevens-Johnson Syndrome

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Introduction

Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN) are hypersensitivity reactions that most commonly manifest as serious skin reactions caused by medication usage that can occur alongside systemic symptoms. We are presenting a case of SJS in a 32-year-old female who initially presented with a several-day history of a worsening rash. Diagnosis of cannabinoid-induced SJS was established following skin biopsy and detailed history-taking of medication and other drug usage. She was treated with pain management, antihistamines, and topical steroids with no complications following discharge. There currently exists limited literature describing SJS due to recreational drug usage.

Case Presentation

- 32 year-old female presented with three-day history of painful, worsening vesicular and maculopapular rash refractory to treatment with diphenhydramine, hydrocortisone, and doxycycline; she endorsed fever, chills, headache, mild photophobia
- Rash started as small, erythematous and circular eruptions across chest and neck that blistered and ruptured. Later, the rash spread down her back, abdomen, and bilateral upper and lower extremities, but spared the mucosal surfaces, palms, and soles of feet
- **Past medical history**: anxiety, IBS, degenerative disc disease
- **Medications**: buspirone, venlafaxine, propranolol; no changes in past year
- Known allergies to penicillin-based antibiotics, but no recent usage
- **Vitals**: 38.6°C, HR 90 bpm, BP 146/66 mmHg, RR 15 breaths/min
- CBC, CMP, UA, ESR all within normal limits; CRP was elevated
- Infectious workup ruled out HIV, syphilis, tick-borne diseases, chlamydia, gonorrhea, HSV, VZV, *Mycoplasma pneumoniae*
- **Biopsy**: cytotoxicity dermatitis with mononuclear infiltrate of the upper two-thirds of the epidermis with vacuolar changes noted at the dermal-epidermal junction → differential includes erythema multiforme, paraneoplastic pemphigus vulgaris, SJS/TEN
- Patient later developed leukopenia, elevated transaminase levels consistent with atypical presentation for tick-borne illness; started on doxycycline
- Further history-taking revealed the patient had utilized a new strain of cannabis days before onset of rash
- **Treatment**: acetaminophen, hydromorphone, diphenhydramine, topical triamcinolone, hydroxyzine, artificial tears, IV fluids

Figures

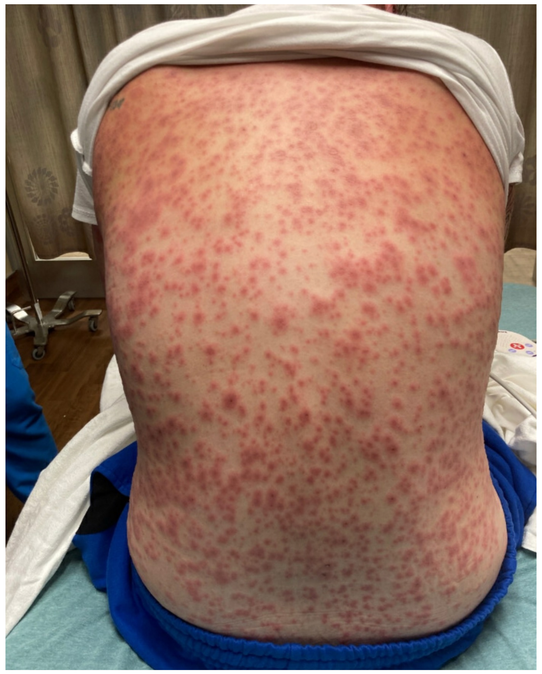

Figure 1. Patient's Back. Diffuse erythematous, vesicular, maculopapular rash with scattered erosions

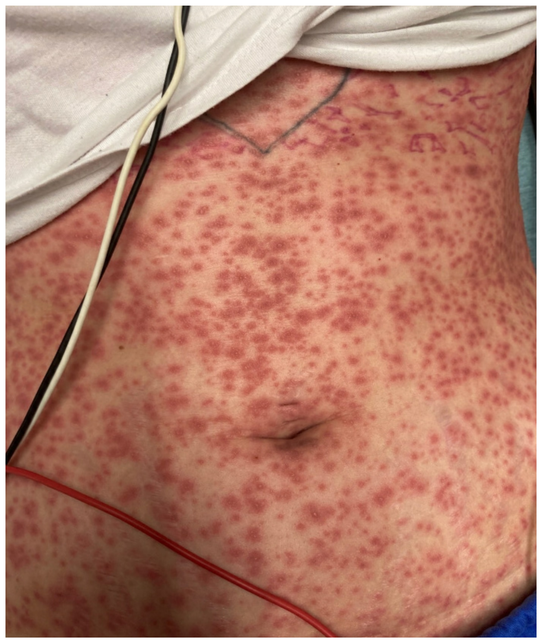

Figure 2. Patient's Abdomen. Edematous papules, some targetoid lesions with central vesicles

Discussion

- SJS/TEN involve severe cutaneous eruptions that are characterized by disruption of the epidermal-dermal junction leading to severe skin sloughing, often associated with mucosal involvement
- Typically associated with medication use, with the greatest risk 1-3 weeks following new medication exposure. Clinical suspicion is much lower in long-term medications
- A prodrome may precede the rash associated with SJS/TEN: flu-like symptoms, fever, chills, photophobia, conjunctival irritation, dysphagia
- Epidermal lesions will appear as diffuse erythematous or dusky violaceous patches, targetoid lesions with central necrosis, and scattered bullae and blistering of these lesions that may progress into erosions or ulcers, with a positive Nikolsky sign
- Other clinical features: anemia and lymphopenia, electrolyte abnormalities, elevation of aminotransferases, 8-12 day time course
- The temporal relationship between our patient's rash and the initiation of a new strain of cannabis increases the index of suspicion for the causative nature of the agent, but diagnosis is not definitive

Treatment Considerations

- Wound Care
- Fluid, Temperature, Electrolyte Management
- Pain Control
- Infection Prevention and Treatment
- Multidisciplinary Consultations

- Limited literature exists linking unregulated drug usage to SJS/TEN, but clinicians should be aware of this potential association, particularly as recent movements towards legalization and decriminalization of cannabis products correlate with increased utilization by patients recreationally and for management of medical conditions

Conclusion

Here, we have described a novel case of SJS caused by cannabinoid usage. This case demonstrates that detailed history taking is necessary to delineate exposures in the setting of SJS. Recreational drug usage is unregulated by the FDA and thus poses unknown risk of hypersensitivity reactions, and further research will provide increased understanding of the association between cannabis products and SJS. Rapid identification of causative agents with SJS is critical for discontinuation and future avoidance to reduce morbidity and improve clinical outcomes.