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Case Report

Stevens Johnson syndrome following paraquat poisoning: a case report

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ABSTRACT

Paraquat is a herbicidal agent used extensively, mainly in developing countries where there is a high incidence of its poisoning. It causes damage to kidneys, lungs and liver. Reports of mucocutaneous manifestations following paraquat ingestion are rare. Here we describe a case of Stevens-Johnson syndrome(SJS) presenting in a case of paraquat ingestion. A 22 year old male was admitted to our hospital for difficulty in swallowing and micturation since ingestion of 10-15 ml of paraquat 7 days before. He had multiple hemorrhagic crusted erosions over lips and left maxillary area with diffuse erythematous erosions over bilateral buccal mucosa, palate, labial mucosa and urethral mucosa with whitish slough over them. Upper GI endoscopy revealed oral, esophageal and fundal sloughing. Patient was treated with oral corticosteroids and antibiotics which caused complete resolution of skin lesions within 15 days. Paraquat dichloride exerts its toxicity by generation of reactive oxygen species. Skin lesions following topical application of paraquat are common, but very few cases have been reported of the same after oral ingestion. SJS is caused by a variety of drugs and commonly presents with muco-cutaneous tenderness, hemorrhagic erosions and erythematous macules with 90% developing oral, genital and gastrointestinal mucosal involvement. As the oral and genital manifestations in our patient developed the day after paraquat ingestion, possibility of SJS developing due to the same are the highest. Paraquat should not be ruled out as a drug causality if mucocutaneous manifestations of SJS/TEN appear in a patient of paraquat ingestion.

Keywords: Paraquat, Poisoning, Stevens-Johnson

INTRODUCTION

Paraquat is a herbicidal agent used usually in its dichloride form. Chemically, it is N,N-dimethyl-4,4-bipyridinium chloride.[1] It is available in Indian market as Gramoxone and Weedol. It is a highly toxic compound and has a propensity to cause damage to lungs, liver and kidneys.[1] As it is a relatively inexpensive compound, it is readily available and hence the incidence of paraquat poisoning is high in developing countries.

Stevens-Johnson Syndrome (SJS) is a type IV hypersensitivity reaction that involves the skin and mucous membranes. The involvement of oral and genitourinary areas is common and might cause difficulty in ingestion of food and voiding of urine respectively.[2] It can be caused by a variety of medications, commonly NSAIDs, anti-epileptics, penicillins, sulfonamides etc.[2] Here, a case of accidental paraquat ingestion is presented with SJS involving oral and genitourinary mucous membranes.

CASE REPORT

A 22 year old male patient was admitted in the hospital for complaints of difficulty in swallowing and micturation following accidental ingestion of 10-15ml of Grammoxone (Paraquat dichloride) 7 days earlier.

Patient had multiple hemorrhagic crusted erosions over lips and left maxillary area with diffuse erythematous erosions

over bilateral buccal mucosa, palate, labial mucosa and urethral mucosa with whitish slough over them (Figure 1 and Figure 2). These lesions had developed the day after paraquat ingestion. Patient had been treated at another hospital 3 days later following which patient was brought to the hospital. Patient presented to us with acute kidney injury (AKI) and the aforementioned lesions. Upper GI endoscopy was done which was suggestive of oral, esophageal and fundal sloughing.

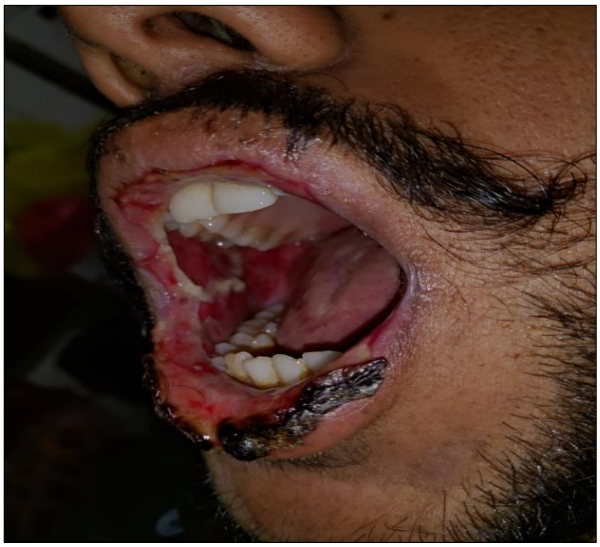

Figure 1: Hemorrhagic crusted lesions over lips with erythematous lesions in buccal mucosa, palate and labial mucosa with whitish slough over them.

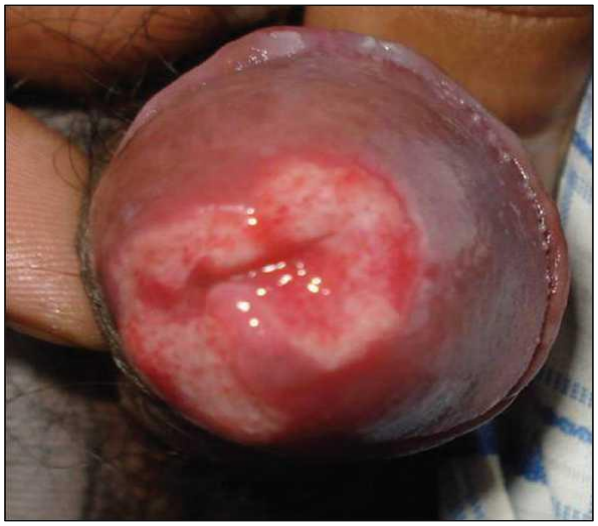

Figure 2: Erythematous erosions over ureteral mucosa.

Patient was placed on oral beta-lactum antibiotics, corticosteroids and choline salicylate gel for local application for the skin lesions with intravenous fluids for management of AKI. Patient was discharged once he started swallowing and was seen in follow-up after 15 days with complete resolution of the AKI and skin lesions.

DISCUSSION

Paraquat toxicity is mainly caused by its ability to undergo redox-cycling in mitochondria and generate reactive oxygen species (ROS).[3-6] Skin lesions following paraquat application have been reported frequently, however, few cases have ever been reported of mucosal manifestations after oral ingestion of paraquat.[7-9] To the knowledge, only 1 case has been reported till now, from China in 2015, where patients developed toxic epidermal necrolysis (TEN) after ingestion of paraquat dichloride.[10] No cases have been reported in India of SJS developing in a patient after ingestion of paraquat.

SJS commonly presents with mucocutaneous tenderness, hemorrhagic erosions and erythematous macules. Non-specific symptoms like fever, discomfort in swallowing and burning sensation in the eyes are common which usually precede the cutaneous/mucosal manifestations.[11] 90% of the patients present with oral, genital and/or gastrointestinal mucosal involvement which is visible as erythema and erosions.[11] Reports have shown that 73% of patients with acute phase mucosal involvement subsequently presented with long-term complications with mucosal sequelae involving the oral and oesophagal mucosa majorly, and to a lesser degree, the genital and pulmonary mucosa.[12]

A number of drugs are implicated in the development of SJS: Antibiotics [sulfonamides (most common), beta lactams, fluoroquinolones, tetracyclines, macrolides, metronidazole], anticonvulsants (carbamezepine, lamotrigine, phenytoin, sodium alproate, levetircetam), diuretics, NSAIDs, antidepressants, allopurinol, anti-cancer drugs (paclitaxel, docetaxel), antiviral drugs (oseltamivir, adefovir, nevirapine), immunomodulators etc.[2] In patient, the oral and genital manifestations of SJS developed the day after ingestion of paraquat. Patient was treated 3 days later with intravenous cefoperazone+sulbatum, ondansetron and pantoprazole. As the manifestations appeared the day after the paraquat ingestion and there being no history of skin exposure to paraquat, the possibility of SJS having occurred due to paraquat ingestion is the highest.

CONCLUSION

Paraquat should not be ruled out as a drug causality if mucocutaneous manifestations of SJS/TEN appear in a patient of paraquat ingestion.

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