Research Article

Phenytoin Induced Stevens Johnson Syndrome

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ABSTRACT

One of the major adverse effects associated with Phenytoin is Stevens Johnson Syndrome (SJS). SJS is commonly caused by the drugs and also can be associated with consumption of food additives, contact with chemicals. This is a case report on the development of Stevens Johnson Syndrome following the use of Phenytoin. The patient developed multiple lesions on the face, eyelids, oral mucous membrane, both ears, penis, and the left forearm. The patient was managed with the withdrawal of Phenytoin and proper supportive medication.

Keywords: Erythema, Multiple Bullae, Phenytoin, Stevens Johnson Syndrome, Seizure.

INTRODUCTION

Stevens Johnson Syndrome (SJS) is an acute life threatening muco-cutaneous reaction characterized by extensive necrosis and detachment of the epidermis from the skin.[1] In usual cases 10% or less body surface area involvement is there in the patients of Stevens Johnson Syndrome.[2] The overall incidence of Stevens Johnson Syndrome is seen 1 to 6 per million per year.[1] In SJS also there is systemic involvement with severe morbidity and even death. SJS has the mortality rate of nearly 1-5%. However, when more than 30% Body Surface Area sloughing is present, the mortality rate rises to 25% [8-9]. The incubation period is 4 days to 4 weeks.[3] SJS is mostly caused by the drugs and the reaction is free of the dose of the drug and is a kind of idiosyncratic reaction.[3] SJS may also be associated with consumption of food additives, contact with chemicals and also seen in the ICU as graft versus host reactions. Stevens Johnson Syndrome is marked by sudden onset, symptoms consisting of high fever, malaise, myalgia, arthralgia and extensive erythema multiforme like lesions and subsequent skin blisters and erosions. Early diagnosis and treatment is associated with favourable prognosis and less incidence of complications. Several studies and case reports on SJS have been done in India as well as abroad since the description of SJS case by Stevens and Johnson in 1922 and Toxic Epidermal Necrolysis case by Lyell's in 1956. SJS is characterized by sudden onset, marked constitutional symptoms of high fever, malaise, myalgia, arthralgia and extensive erythema multiforme like lesions and subsequent skin blisters and erosions. Early diagnosis and treatment is associated with favourable prognosis and less incidence of complications.[4]

CASE REPORT

This case developed Stevens Johnson Syndrome after receiving Phenytoin for Tonic Clonic seizures in the department of Medicine at Silchar Medical College & Hospital. The patient is a 55 years old, male, smoker from poor socio economic background, weighing 60 kgs. He attended OPD with history of fits associated with loss of consciousness and rolling of eyeballs. The patient has no history of diabetes and hypertension. Diagnosis of Generalized seizure was established from history, clinical examination and EEG report.

Figure 1: Clinical photograph showing erythema of the eyelids.

Figure 2: Clinical photograph showing erythema over face.

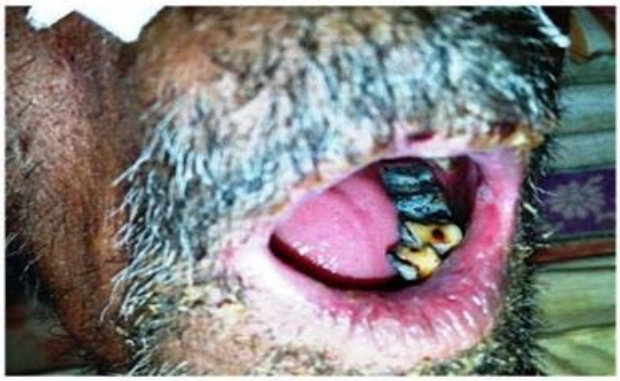

Figure 3: Clinical photograph showing multilple erosions over the buccal mucosa.

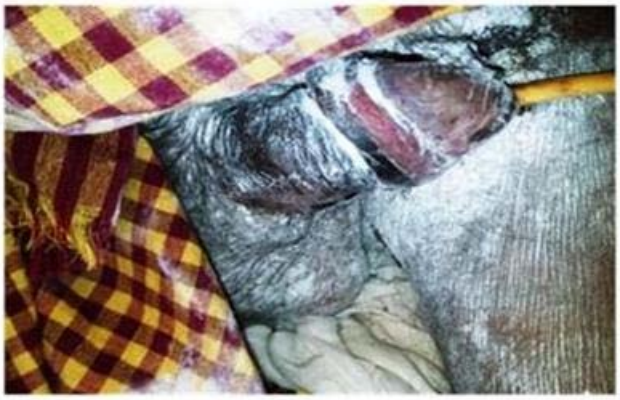

Figure 4: Clinical photograph showing erosion in the genital area.

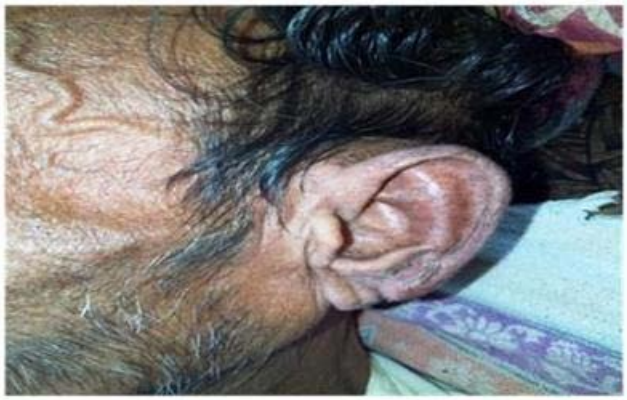

Figure 5: Clinical photograph showing skin erosion over the ears.

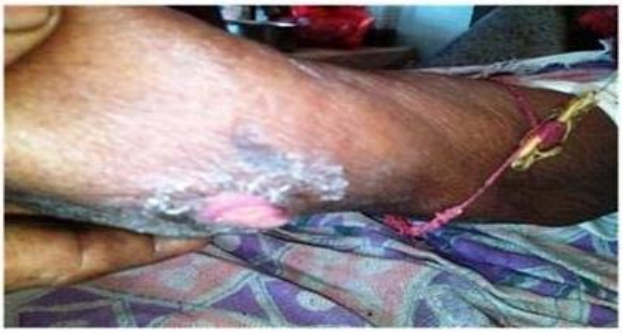

Figure 6: Clinical photograph showing lesion over forearm.

The patient received Phenytoin IV in the dose of 5 ampoules of Phenytoin containing 100mg/2ml dissolved in 100 ml of normal saline very slowly intravenously once daily. After 6 days of administration of Phenytoin Injection, the patient started having conjunctival congestion with sticking of the lid margins. He developed erythema of the eyelids with crusting (figure 1). He received Moxifloxacin eye drops with eye ointment of Tobramycin. Then there was severe reaction on 8th day with multiple bullae formation & excoriation on the face, oral mucosa, eyelids, dorsal surface of the forearm, ears, penis and scrotum. On the face patient developed diffuse erythematous lesions with a crinkled surface. They rapidly coalesed to form dusky erythema (figure 2). In the oral mucosa, bullae rapidly ruptured to form multilple erosions which later on got covered by white slough (figure 3). Erosion of the skin occurred over the skin in the genital area. Glans penis area was red with the appearance of a bleeding surface (figure 4). Skin was erythematous over the both ears (figure 5). A large lesion was seen over the forearm over the left elbow joint (figure 6). Here, large areas of the skin got removed, exposing the dermis over the forearm. Dermis was seen oozing almost resembling a thermal burn of the 2nd degree.

The case was referred to the Dermatology department where it was diagnosed as Stevens Johnson Syndrome induced by Phenytoin. Phenytoin was stopped and Valproate was given orally due to this adverse reaction. The treatment was started aggressively with intravenous fluids. Normal saline was followed by Ringers Lactate. Nutrients and proteins were administered through the nasogastric feeding tube for faster recovery of the patient. The patient was advised alcohol free chlorhexidine mouthrinse (0.2%) for the oral lesions to heal quickly. The patient then received fusidic acid ointment, miconazole ointment and levocetrizine tab. After 7 days of treatment and stoppage of Phenytoin the eruptions started to heal. Re-growth over the ulcerated areas occurred. The ocular and the mucosal lesions almost disappeared. He was discharged after 5 weeks with the healing of the lesions and improvement of the general condition. He was advised a routine check up with continuation of medication for the seizures.

DISCUSSION

Stevens - Johnson syndrome is mostly a clinical diagnosis, a hypersensitivity complex which affects the skin and mucous-membranes. Immunological cause suggest a route involving CD8+ cytotoxic T-cells leading to keratinocyte apoptosis, but the current understanding is far from complete.[5] Stevens Johnson syndrome is potentially a fatal condition of skin & mucus membrane but can also affect other vital organs. Patients safety is prime important while physician treating the patient and lack of physician knowledge in drugs, improper guidance by the Pharmacist, lack of patient counseling, poor patient memories are the factor leading to such

syndromes in human beings. Commonly some of the drugs like Carbamazepine, Phenobarbital, Phenytoin have high incidence to cause SJS and also these kinds of reactions are independent of dose of the drug and are idiosyncratic.[6] A study with adverse reactions of Stevens Johnson Syndrome due to anti-seizure drugs revealed that they had the higher chance (81.8%) of causing severe eruption that is SJS than NSAIDs (53.84%) and Antimicrobials (34.48%). This is higher as compared with the previous report (70%). The exact mechanism of SJS is still unknown.[7]

Naranjos causality scale was used to see the association of SJS with Phenytoin. The following data was considered: conclusive reports on association of Phenytoin with Stevens Johnson Syndrome(SJS) (score 1); appearance of SJS after Phenytoin was given (score 2); improvement of SJS following discontinuation of Phenytoin (score 1); no other alternative causes that could have caused this reaction (score 2) ; whether the reaction appeared when placebo was given (score 1); total score of 7 was seen. Based on it, it was classified as Phenytoin being the probable cause of Stevens Johnson Syndrome.

CONCLUSION

From this case we have seen Phenytoin to be a cause of a life threatening condition. It has become necessary for a clinician to identify the adverse effects following a drug use and report it at the earliest. This can prevent fatal outcomes from such a hypersensitivity reaction.

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