Phenytoin-Induced Toxic Epidermal Necrolysis with Immediate Remission Post Intravenous Immunoglobulin Therapy

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Seizure is a common manifestation of supratentorial intracranial parenchymal tumors.[1] Phenytoin is used for seizure control in the perioperative period. Toxic epidermal necrolysis (TEN) is a life-threatening mucocutaneous condition involving more than 30% of the body surface area and is not commonly encountered in clinical practice. Antiepileptics are notorious for causing TEN.[2]

A 63-year-old female was admitted to the neurosurgical emergency department with recent onset, intermittent, focal seizures involving the right upper limb. Clinical examination was unremarkable. She was started on intravenous phenytoin —an initial 1,000 mg loading dose followed by 100 mg thrice daily. Magnetic resonance imaging of the brain revealed a cystic lesion involving the left frontoparietal area without significant mass effect. She underwent elective craniotomy and tumor decompression under general anesthesia with an uneventful intraoperative course. On postoperative day 1, the patient developed one episode of generalized tonic–clonic seizure followed by deterioration of sensorium. She was shifted to the neurosurgical intensive care unit (NSICU), intubated, and mechanically ventilated. On arrival to the NSICU, diffuse erythema was noted involving the face, trunk, and extremities with oral mucosal involvement. The possibility of adverse drug reaction was considered, and all the possible medications (antibiotics, analgesics, and phenytoin) were withheld, and the patient was treated with intravenous hydrocortisone. A review of history from close relatives revealed a similar event in the past (5 years before) following consumption of oral phenytoin tablets. On postoperative day 2 in NSICU, the skin rashes became very prominent with the appearance of blisters all over the body followed by skin peeling (►**Fig. 1A,B**) and oozing of fluids. A probable diagnosis of phenytoin induced TEN was considered. Fluid balance was optimized, and vasopressors were initiated to maintained hemodynamic stability. Low-dose intravenous ketamine infusion at 0.25 mg/kg/h was started to provide analgesia. Skincare was provided by applying liquid paraffin-soaked gauges over the exposed areas and wrapping the patient with banana leaf. Intravenous immunoglobulin (IVIG) was started (0.5 gm/kg/day) as a definitive treatment for TEN. Patient had dramatic improvement in the skin condition with the disappearance of blisters on day 2 of IVIG therapy. Following completion of IVIG course on day 5, the general condition improved considerably, requiring minimal hemodynamic support. The trachea was extubated, and the patient was discharged with full sensorium after 10 days of stay in the NSICU.

Stevens–Johnson syndrome (SJS) and TEN are spectra of the same mucocutaneous condition classified based on the extent of skin involvement (SJS $<$10% and TEN $>$30% body surface area). TEN is commonly differentiated from other drug rashes by the presence of oozing blisters and extensive skin peeling. Supportive treatment along with skincare are the two cornerstones in the management of SJS and TEN. Apart from allopurinol, sulfonamide, beta-lactam antibiotics, and nevirapine, anticonvulsants are the key culprits. Wrapping the body in banana leaf is a traditional method for skincare in India with proven beneficial effects.[3] Although there is no definitive treatment for TEN, steroids and IVIG have been tried in the past. The use of steroids in TEN is controversial as it can lead to sepsis and worsen mortality. Lee et al did not document any

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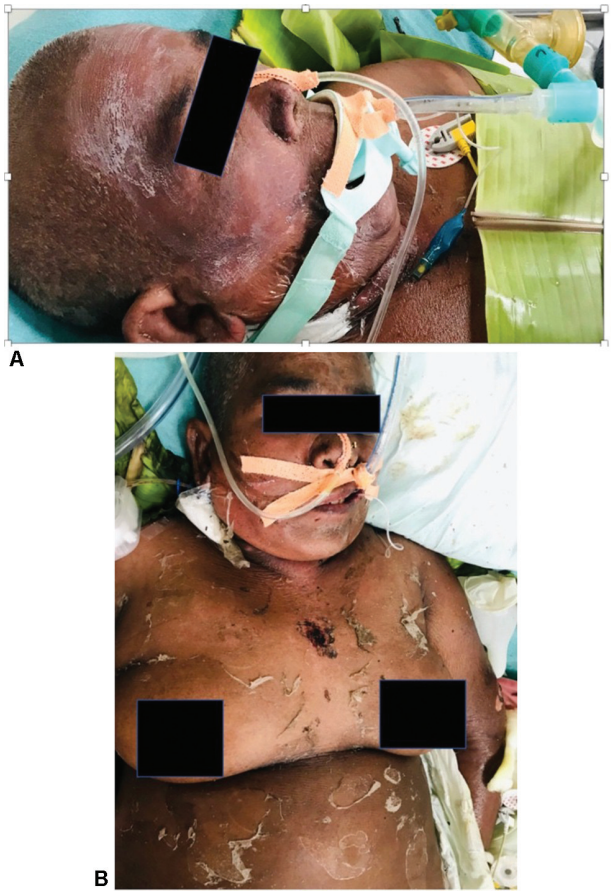

Figs. 1 (**A**,**B**) Cutaneous manifestation of phenytoin-induced toxic epidermal necrolysis.

clinical benefit based on their retrospective analysis of 64 patients who received IVIG as part of the management of SJS/TEN.[4] Even though a little conflicting piece of evidence exists, high-dose IVIG has been shown to provide some benefit in drug-induced TEN.[5,6]

In summary, we describe the successful management of life-threatening phenytoin-induced TEN with IVIG therapy. IVIG should be considered early in the treatment of drug-induced TEN.

Conflict of Interest

None declared.

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