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Case Report

A case of generalized bullous fixed drug eruptions induced by ceftriaxone

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ABSTRACT

Fixed drug eruption (FDE) is a delayed-type hypersensitivity reaction to a systemic medication. Generalized bullous fixed drug eruption (GBFDE) is a rare variant involving generalized bullae and erosions across multiple anatomical sites. A 66-year-old female with dialysis-dependent chronic kidney disease presented with fever and chills, and subsequently developed multiple erythematous to bluish annular nodules with central bullae on the hands, feet, tongue, buccal mucosa, and lips after ceftriaxone administration. Clinical examination revealed no prior history of drug allergies. Diagnostic assessments showed elevated serum creatinine and other parameters consistent with renal impairment. The suspected drug was discontinued, and patient treated with oral prednisolone, levocetirizine, topical betamethasone, and fusidic acid. Oral paste and gargles were prescribed for mucosal involvement. This case highlights the importance of recognizing ceftriaxone-induced GBFDE, particularly in patients with chronic kidney disease on haemodialysis. Prompt identification and cessation of the offending drug, along with appropriate therapeutic interventions, are critical for preventing future episodes and ensuring patient safety.

Keywords: Generalized bullous fixed drug eruption (GBFDE), Ceftriaxone-induced hypersensitivity, Chronic kidney disease (CKD), Erythematous patches, Bullae and erosions

INTRODUCTION

Fixed drug eruption (FDE) is characterized as a delayed-type hypersensitivity reaction occurring secondary to systemic exposure to a causative medication.[1] FDE is characterized by sharply demarcated, oval to rounded erythematous patches that can be single or multiple. These lesions commonly appear on the extremities, genitals, perianal area, or any part of the body.[2] Generalized bullous fixed drug eruption is a rare variant of fixed drug eruption (FDE) that is characterized by the presence of generalized bullae and erosions alongside the distinctive FDE lesions. This condition involves at least three anatomical sites: head and neck (including lips), anterior or posterior trunk, upper limbs, lower limbs, and genitalia. Extensive areas of unaffected skin surround the eruptions, and most patients exhibit skin detachment in less than 10% of the affected area.[3] An erythematous patch typically appears within hours of administering the offending drug, heals with residual hyperpigmentation, and reappears upon re-administration. Initially, the lesions present as dusky red macules with erythema, accompanied by a burning sensation, itching, bulla formation, and crusting. Ceftriaxone demonstrates a broad spectrum of in vitro activity against gram-positive and gram-negative aerobic and some anaerobic bacteria. It is effective against both penicillin-sensitive and penicillin-resistant strains of staphylococcus aureus. Compared to first and second-generation cephalosporins, ceftriaxone offers a wider spectrum and enhanced activity against gram-negative aerobic bacteria. In clinical use, ceftriaxone has been generally well-tolerated by both adults and children when

administered via intravenous or intramuscular injection. The most frequently reported side effects include diarrhoea, exanthema, rash or pruritus, and injection site reactions such as phlebitis and pain during intramuscular injection.[4]

CASE REPORT

A 66-year-old female with dialysis-dependent chronic kidney disease and a psychiatric condition- behavioural and psychological symptoms of dementia (BPSD) presented at the medicine department with fever and chills, without vomiting, diarrhoea, burning micturition, or edema. The patient was given 1 mg of ceftriaxone IV. Within 24 hours, she developed lesions all over the body compelling a visit to the dermatology department. She had multiple erythematous to bluish-coloured annular nodules with central fluid-filled bulla present over the bilateral dorsum of both hands and the planter aspect of feet (Figure 1).

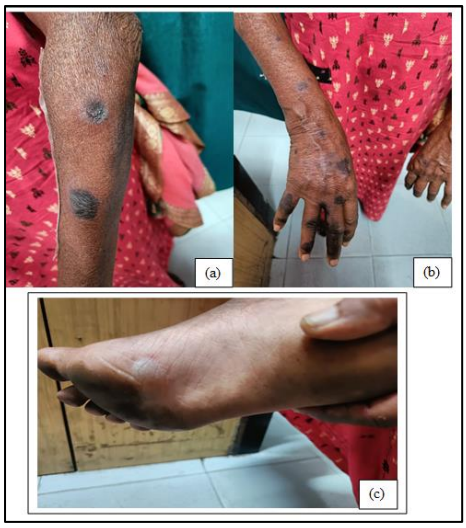

Figure 1: Multiple erythematous annular nodules with central fluid-filled bulla (a) Present over dorsum aspect of the left hand (b) Present over dorsum aspect of the right hand (c) Plantar aspect of the right feet.

Figure 2: Eroded area with a whitish slough presents over (a) The tongue and buccal mucosa (b) Both lips with erosion.

She also had a significant eroded area with a whitish slough over the tongue, buccal mucosa, and both lips (Figure 2). The patient denied any history of drug allergy or hypersensitivity reactions.

Clinical finding

Physical examination showed the temperature at 37°C, blood pressure 160/80 mmHg, pulse 74/min, respiratory rate 18 breaths/min, and oxygen saturation at 98% room air, CVS: S1 S2 was normal, no murmur. There was no jaundice or cyanosis and no palpable cervical lymphadenopathy.

Diagnostic assessment

HB:8.2%, total leukocyte count: 8800 m^3, platelets: 3.08 lakh/m3, PCV: 26, MP-negative: Serum creat:3.76 mmol/l, FBS:76 serum osmol: Urine osmolarity:108 mmol, Urine glucose-19 mmol/l, urine Na+: 41.20 mmol/l, Urine K+:12.30 mmol/l. From the clear clinical presentation, and temporal association of drug intake, the patient was diagnosed with Ceftriaxone-induced generalized bullous FDE.

Therapeutic intervention

Ceftriaxone was put on hold, and the patient was prescribed 4 doses of prednisolone 5 mg orally with milk and levocetirizine-5 mg 2 times a day, and for local applications, betamethasone and fusidic cream. Oral paste was prescribed for local application of triamcinolone and chlorhexidine for oral gargles. After this, the patient's condition improved.

DISCUSSION

Generalized bullous fixed drug eruption (GBFDE) is an uncommon variant of fixed drug eruption (FDE). Widespread bullae, erosions, and typical FDE lesions characterize it. To be classified as GBFDE, these lesions must involve at least three anatomical sites: the head and neck (including the lips), the anterior or posterior trunk, the upper limbs, the lower limbs, and the genitalia.[1,3,5] Medical history and clinical presentation are critical to differentiating GBFDE from SJ/TEN.[1]

The timing from exposure of ceftriaxone to the onset of cutaneous findings can provide a clue for diagnosis; FDE generally occurs within 30 minutes to 24 hours of exposure to the drug exposure.[6] Constitutional symptoms (fevers, chills, or malaise) are seen in patients with GBFDE.[5] Most patients with GFDE typically have concurrent multidrug use, involvement of the upper limbs, multiple episodes, and a history of antibiotic use.

Mucous membrane FDE lesions may be alone or associated with skin involvement. Still, mucous membrane involvement is more common in the bullous variant than in the non-bullous variant of GFDE.[7,8]

CONCLUSION

This case highlights a unique instance of ceftriaxone-induced generalized bullous fixed drug eruption (GBFDE) in a patient with dialysis-dependent chronic kidney disease. The patient's history, clinical presentation, and prompt identification of the causative agent allowed for the timely discontinuation of ceftriaxone and appropriate management with corticosteroids and antihistamines. This case underscores the importance of recognizing GBFDE, particularly in patients with underlying conditions like renal failure, to prevent future episodes and complications. It also emphasizes the need for healthcare providers to maintain a high index of suspicion for drug-induced reactions in patients presenting with widespread bullous lesions and systemic symptoms.

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