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FIXED DRUG ERUPTION DUE TO PARACETAMOL

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ABSTRACT

Fixed drug eruption (FDE) is a form of drug-induced cutaneous adverse event caused by Type IV or delayed cell-mediated hypersensitivity that manifests as a recurrence of a comparable lesion at the same skin or mucosal site after systemic drug exposure. In all age groups of patients, paracetamol is the most usually given analgesic-antipyretic medication. A modest number of pruritic, well-circumscribed, erythematous macules are typical of a fixed drug eruption. These lesions usually reoccur at the same location and go away on their own once the causative substance is stopped. Fixed drug eruption is a well-known but rare side effect of paracetamol, most typically the classic, pigmenting variety encountered in children and teenagers. Paracetamol is a frequently prescribed analgesic and antipyretic with a well-established safety profile. We present a case of a 40-year-old male who had FDE as a result of paracetamol, resulting in generalised necrosis of the skin over his body. Patient presented with burning sensation of eyes along with watering of eyes. He had disturbed sleep secondary to burning sensation. The patient developed erosion in oral cavity since 2 days and also erosion in genitalia along with burning micturition since 1 day. The lesions resolved with a faint lingering hyperpigmentation after 15 days of treatment. Skin biopsy was performed from lesion on right arm. After starting the suggested course of treatment, the symptoms considerably improved.

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INTRODUCTION

Fixed drug eruption (FDE) is a well-defined, circular or oval, hyperpigmenting erythematous patches that recurs as one or a few lesions always in fixed locations upon ingestion of a drug. The genitals, lips, trunk, and hands are also common sites for FDE. Lesions often disappear with postinflammatory hyperpigmentation after withdrawal of the offending medication, but return at the same places with recurrent drug exposure. The remaining hyperpigmentation acts as a site identification signal. Exposure to the suspected drug on a frequent basis might result in the formation of new lesions as well as the enhancement of existing hyperpigmented lesions[1]. Re-challenge may activate CD8 T cells that have been kept in the lesions as an immunological memory. Among the more than 70 medicines that have been linked to FDEs, ibuprofen, sulfonamides, tetracyclines, and naproxen are the most prevalent.

FDE lesions usually appear within hours or days after exposure to the offending medication. These lesions can appear anywhere on the body, including the glans penis and the sacral area. FDE is frequently diagnosed by clinical examination. Histopathologic analysis, on the other hand, can aid in the diagnosis. Oral provocation tests can be used to confirm the diagnosis of FDE, although they are not recommended due to the danger of causing a broad bullous eruption.Paracetamol is a readily available over the counter antipyretic and is generally well tolerated at recommended dose. Its cutaneous adverse effects are rare, varying from mild pruritis to severe form of rash as in Stevens–Johnson syndrome and even fatal toxic epidermal necrolysis.

OBJECTIVE

An inpatient study at the Dermatology Department of the Karnataka Institute of Medical Sciences (KIMS) Hospital in Hubballi was carried out. The institutional ethical committee gave its approval for the case report and granted permission to gather data. This study focuses on finding out adverse drug events that may encountered while undergoing medications.It aims to aware patients while taking medications without prescription and consultation.

CASE REPORT

A 40 year old male patient was presented to hospital with multiple grouped vesicles and bullae with erosions of skin all over the body since 3 days. The patient had fever associated with chills 4 days before and took tablet for sore throat on same day. Patient presented with burning sensation of eyes along with watering of eyes. He had disturbed sleep secondary to burning sensation. The patient developed erosion in oral cavity since 2 days and also erosion in genitalia along with burning micturition since 1 day. Patient history revealed that, he had developed similar 2 episodes of reaction 6 years and 3 years ago when he took tablets for upper respiratory tract infection. Patient was apparently normal 3 days back then he developed itchiness all over body initially after taken paracetamol for fever. In order to subside itching patient consumed cetrizine . It was sudden in onset of progressive in nature, itching was developed at upper limb, lower limb, trunk followed by multiple blisters formation over upper limb, lower limb, trunk and genitals . He had a history of alcohol consumption twice weekly. In laboratory findings, complete blood count were as follows; white blood cells 15000/mm^3 (neutrophils : 88.8%, lymphocytes :9.4%, monocyte : 1.3%, eosinophil : 0.3%, basophil :0.2%), haemoglobin: 16.8g/dl, platelet: 394*10^3/ul. Hepatic enzymes, blood urea nitrogen andserum creatinine were within normal ranges.Patient was managed with Inj.Dexamethasone 2cc, Inj.Pantop 40mg, Inj.Ceftriaxone 1g and Calamine lotion(BD), Soframycin cream(OD), Liquid paraffin(OD) for topical application on affected areas of the skin. The lesions resolved with a faint lingering hyperpigmentation after 15 days of above treatment. Skin biopsy was performed from lesion on right arm. In our patient no oral provocation test and patch test was performed as the idea was rejected by the patient. The diagnosis of FDE was established based on clinical findings, clinical history of patient and histopathologic findings.

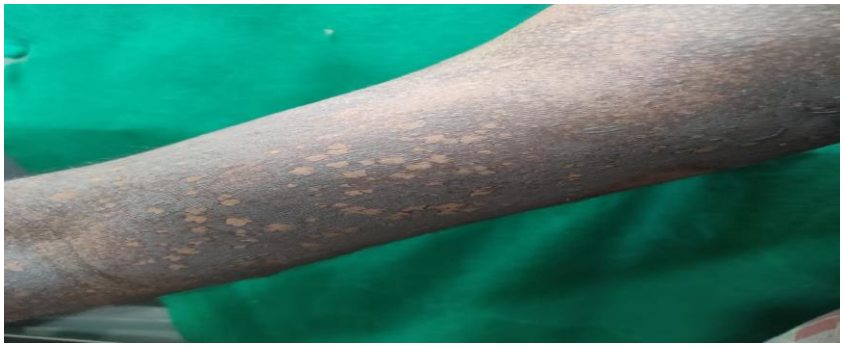

Figure 1 : Skin erosion.

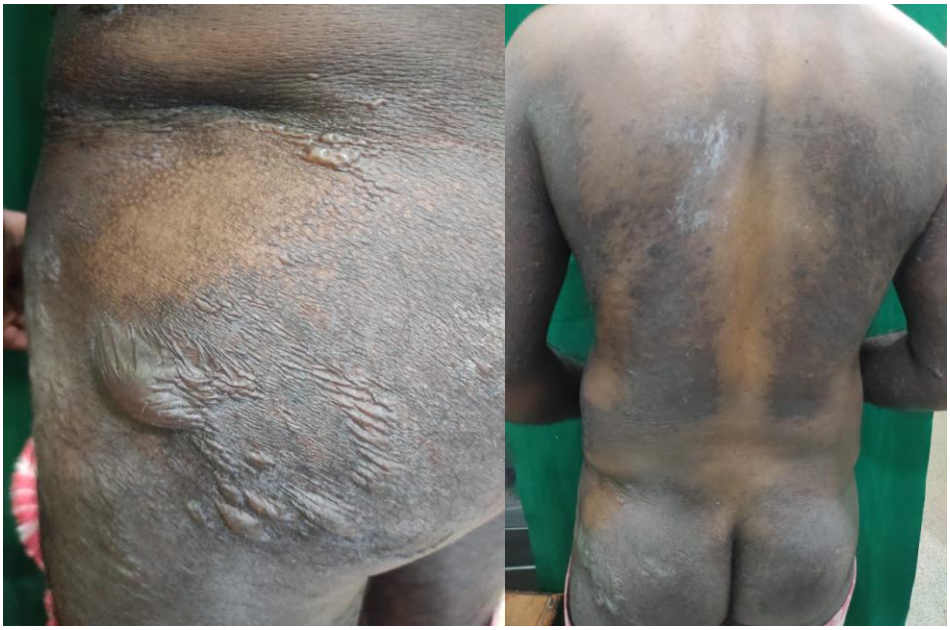

Figure 2 and 3: Multiple grouped vesicles and bullae.

DISCUSSION

Paracetamol is a common over-the-counter analgesic and antipyretic with a good safety profile and a minimal risk of adverse effects. Paracetamol-induced toxic eruptions are uncommon and generally of the fixed pigmenting kind. FDE caused by paracetamol is recorded in fewer than 1% of all FDE cases. Maculopapular rash, cellulites, bullous reaction, or pigmenting type sensitivities are also possible. Round or oval, highly delineated erythematous or edematous plaques appear on the lip, hip, sacrum, leg, hand, face, oral mucosa, and genitalia.

A modest number of pruritic, well-circumscribed, erythematous macules are typical of a fixed drug eruption. These lesions usually reoccur at the same location and go away on their own once the causative substance is stopped. After morbilliform rashes and urticaria, fixed drug eruptions are the third most frequent cutaneous responses (CDRs) in individuals undergoing medication treatment. Although the specific mechanism of FDE is uncertain, it is thought to be an allergic reaction. The offending substance is considered to work as a hapten that binds preferentially to basal keratinocytes, causing lymphocytes and antibodies to be released and destroying the basal cell layer. Fixed drug eruption is a kind of delayed-type hypersensitivity that is mediated by CD8+ T lymphocytes. Mast cells are considered to contribute to the activation of intraepidermal CD8+ T lymphocytes during the early phase of fixed drug eruption responses by inducing cell adhesion molecules on keratinocytes, according to a prior study. T cell receptors or mast cell receptor may detect the chemical structure since it is comparable.

To detect a fixed drug eruption, an oral challenge test and a patch test are commonly used. The reactions are evaluated on a scale of negative to severe positive, with strong erythema and coalescing vesicles. Patch tests should be performed at the location of the prior lesion and should be given enough time to avoid refractoriness. These considerations may help to reduce the number of false negatives. In many forms of delayed drug eruptions, the lymphocyte transformation test (LTT) is also reliable in identifying the causal medication[2].

CONCLUSION

Paracetamol is a frequently prescribed analgesic and antipyretic with a well-established safety profile[3]. However, physicians should be aware of this type of unusual cutaneous drug reaction so that they can advise patients to stop taking the offending drug and report it immediately, and in the future, proper drugs can be substituted for the offending drug so that the patient does not experience cosmetic issues as a result of the residual hyperpigmentation.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

LTT : Lymphocyte transformation test
FDE : Fixed drug eruption
CDR : Cutaneous Drug Response

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