

Case report of permethrin induced exfoliative dermatitis

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Abstract

Exfoliative dermatitis is a life threatening condition associated with erythema and scaling that requires proper diagnosis, identification of underlying etiology, and management. Male to female preference for erythroderma ranges from 2 to 4 to 1, with a mean onset age of 40 to 60. Exfoliative dermatitis may be brought on by a medication reaction or an underlying cancer, however the exact cause is unknown. We presented a 45-year-old female patient with Exfoliative dermatitis who admitted to the hospital with complaints of dark colored itchy lesions all over the body for last 1 month, itching over back, axilla and chest region, fever due to application of permethrin lotion. The most common cause of exfoliative dermatitis is permethrin lotion. The drug must be stopped and proper treatment must be given like anti histamines, corticosteroids, topical emollients. Early diagnosis and early discontinuation of the drug significantly reduces mortality.

Keywords: Exfoliative Dermatitis; Erythema; Emollients; Lesions; Erythroderma; Corticosteroids.

1. Introduction

Exfoliative dermatitis (ED), sometimes referred to as erythroderma, is a serious and unusual condition marked by scaling and redness of the skin over 90% of the the body's surface. [1]The most common causes in adults are past histories of eczema (atopic, seborrheic, or contact) and psoriasis. Additionally, ichthyosis, cutaneous T-cell lymphoma, pityriasisrubrapilar, Norwegian scabies, and Sézary syndrome are risk factors for exfoliative erythroderma. A thorough examination of the patient's past medical history is required to determine potential risk factors, such as infections or topical medication use (such as anti-inflammatory, anti-hypertensive, sulfonamide, antibiotic, allopurinol, or carbamazepine). Histopathology is needed to verify suspected cases of exfoliative erythroderma. [2][3]

The standard medications to manage outbreaks of exfoliative erythroderma linked to psoriasis include methotrexate, cyclosporine, infliximab, and etanercept, systemic or oral corticosteroids. [4] In patients with exfoliative erythroderm, thromboembolic events and infections are the primary causes of death. [5]It's critical to identify and treat ED effectively because it's a dermatological urgency. [6]An artificial pyrethroid that is neurotoxic is permethrin. It attacks mites, lice, and eggs. Scabies and pediculosis are conditions that are managed and treated with the drug permethrin. [7]Some unusual but probable side effects of using permethrin include skin irritation, exfoliative dermatitis, and localized transient paresthesia. [8]

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2. Case report

A 45-year-old female from a middle income group was brought to the hospital with the complaints of dark colored itchy lesions all over the body for last 1 month. The patient developed itching over back, axilla and chest region for which patient was advised by some known person to take T. Avil and 5% Permethrin lotion. The patient applied 5% Permethrin lotion all over body and face for 5 days after which patient developed swelling over body within few days after which patient developed severe itching, redness of skin which spread to entire body within few weeks. Patient developed few fluid filled lesions over foot and hand. Fig 1



Figure 1 Hyper pigmented plaques

Dermatological examination of the female patient revealed multiple erythematous to hyperpigmented plaques with exfoliation with scaling, erosions with few lesions with crusting texture on nose and over lips, eyes, oral mucosa with few scaly plaques over scalp, few bullae present over left foot and webbed space of right hand. Their clinical diagnosis suspected the presence of exfoliative dermatitis induced by permethrin lotion. Patient was a known cause of pulmonary tuberculosis (PTB) since 4 years and was on medication. Initial laboratory data included complete blood count, liver function tests, renal function tests, complete urine examination, chest X – ray. Routine examination showed Hemoglobin – 7.1g/dl, Hematocrit - 23.7%, Mean corpuscular volume – 73.6 fl, Mean cell hemoglobin – 22 pg, Mean corpuscular hemoglobin concentration – 50 g/dl. Her albumin level was decreased to 2.5 g/dl and globulin was elevated to 4.72 g/dl, total serum IgE level – 150 k U/L. ESR and CRP were elevated. Since she objected to the biopsy, the skin biopsy could not be performed. All findings were consistent with a diagnosis of Exfoliative Dermatitis caused by permethrin lotion. Supportive care was initiated using corticosteroids, emollients and anti histamines. Skin involvement, anemia, liver dysfunction were progressively resolved over the subsequent 3 weeks.

3. Discussion

Exfoliative dermatitis sometimes occurs 2 to 6 weeks after initiation of the offending drug. Exfoliative dermatitis is a condition when the majority of the skin, occasionally the entire surface, is inflamed erythematously, causing extensive scaling. ^[9]Exfoliative dermatitis can be brought on by antiepileptic drugs, antihypertensive drugs, antibiotics, calcium channel blockers, and a range of topical treatments. The most commonly reported drug is permethrin. ^[10]Among patients with exfoliative dermatitis, lethargy, pruritis, and a cold feeling are the most commonly reported symptoms. There are reports of both hypothermia and hyperthermia. Additional clinical findings include gynecomastia, lymphadenopathy, hepatomegaly, splenomegaly, and foot or ankle edema. Hyper pigmented plaques with exfoliation with scaling, erosions with few lesions, few bullae present over left foot, hypothermia are seen in our case. ^[11] Mild anemia, leukocytosis, eosinophilia, increased erythrocyte sedimentation rate, aberrant serum protein electrophoresis with a polyclonal elevation in the gamma globulin area, and high IgE levels are typical laboratory values. In our present report our patient reported anemia, elevated IgE levels and we found a significant elevation in liver enzymes. Elevated CRP and ESR were also seen in our case. ^[12] The treatment is to reduce skin inflammation. Bed rest, warm baths or soaks, tasteless emollients, and oral antihistamines are some of these precautions which have been advised to the patient in our case. ^[13]

4. Conclusion

Exfoliative dermatitis is a complicated condition with numerous contributing elements, but the primary factor affecting the course and prognosis of the condition is typically the underlying disease. Exfoliative dermatitis caused by drugs typically resolves quickly if the triggering medication is stopped and the proper treatment is started. Treatment should be started immediately. The drug must be stopped and dexamethasone, pheniramine, soframycin ointment, liquid paraffin should be used. The death rate is frequently high in patients who experience problems, such as infection, changes in fluid and electrolyte levels, and heart failure. In individuals with exfoliative dermatitis, heart failure, septicemia, and pneumonia are the most frequent causes of mortality. Mortality is considerably decreased by early diagnosis and medication withdrawal.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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