

CASE REPORT

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Dermatology Photo Quiz 1

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Abstract

Contact dermatitis (CD) is commonly seen in the dermatology OPD cases. 10 to 20% of all new cases will be suffering from contact dermatitis. The simple meaning of contact dermatitis is, when a substance come in contact with the skin, the substance may directly damage the skin by its cytotoxic effect, or by stimulating immune competent cells to attack skin and cause damage to the skin. Acids like HCl, HNO₃, H₂SO₄ and alkalis like dish washing soaps, detergents, ammonia, potassium hydroxide, sodium hydroxide and cow urine will damage the skin immediately, and the resultant skin damage is called "Irritant Contact Dermatitis (ICD)". Some substances of smaller molecular weights (haptens, 500 to 1000 nm) will penetrate the skin, combine with tissue proteins, and then the antigenicity of tissue protein will get altered, the antigen presenting cell will take up this altered molecule, processes it and present it to immune competent cell CD4+T Lymphocyte. Activated CD4+T lymphocyte will proliferate, few become memory cells, and few become sensitized cells. If same hapten come in contact with the body second time, immune competent cells will react aggressively, person will develop inflammation of skin. This reaction is called "Allergic Contact Dermatitis (ACD)". Here we are reporting a case of ICD.

Keywords: Irritant Contact Dermatitis; Allergic Contact Dermatitis

Patient History & Clinical Photos

Mr. G, 62-year-old male was brought to Dermatology OPD on 24.09.2022, with the history of pruritic bullae over the right side of the body including lower limb,

upper limb and face since 2 hours.

Mr. G went to the field, started clearing waste material from field and cow shed with bare hands, within 2 hours he developed itching over lower limbs, upper limbs and face,

followed by development of vesicles which progressed to form bullae as seen in 1st day photos.



1st day – Entire forearm, from elbow to fingers is erythematous, edematous, and multiple vesicles and bullae are seen.

Tzanck smear – few neutrophils and degenerated epidermal cells against a proteinaceous background.

No acantholytic cells.

Routine investigations are within normal limits.



What is your diagnosis?

5th day – erythema, edema, and bullae have regressed. Healing of broke open bullae are seen.

Dermatology Photo Quiz 1 – Answer

Introduction

Irritant Contact Dermatitis (ICD) is commonly encountered in dermatology OPD. ICD cases are noted in urban population as occupational dermatosis. We are reporting a case of ICD in rural farmer. He is from poor economic status, less educated, not aware of barrier protection and use of moisturizers.¹ He worked in his field bare handed, cleaned cowshed and other garbage of his field. After 2 hours of cleaning the cowshed, he developed itching, redness, edema and blisters, came to hospital for the treatment. The pH of cow urine varies from 8-10, as this person handled the cow urine, and other garbage, he developed ICD.²

Case Report

Mr. G 62-year-old man was brought to hospital by his sons. All of them including the patient was scared and told us that the patient has developed itching and blisters over his face, right upper limb, and right lower limb since 2 hours. He was keeping good health, he got up from the bed cheerfully in the morning, around 9.00 am, went to field, started cleaning cowshed, and other garbage bare handed up to 11.00 am. While he was taking rest, he noticed itching and burning sensation over the body regions, with which he cleaned the cowshed garbage containing cow urine and other waste material.

He noticed itching and burning sensations are increasing, soon he noticed small blebs (vesicles) and the vesicles were enlarging and large blisters were forming on the body, patient and all his relatives got scared, tensed and came to hospital for admission. Patient and all his relatives were properly counselled, and were assured, it is simple problem, and it will be controlled.

Regularly scheduled investigations were all normal. Specific investigation was Tzanck test was done.

Tzanck test revealed degenerated epidermal cells against a proteinaceous background, few neutrophils. Acantholytic cells and eosinophils were not seen.

Considering the history of cleaning the cow waste and other garbage, clinical examination, and Tzanck smear report, the diagnosis is "Irritant Contact Dermatitis".

Discussion

Mr. G when he came to hospital directly from field, his dress had smell of cow urine, which gave the clue to diagnose condition. The smell of cow urine is due to its content, ammonia (2.5% urea). The ammonia and urokinase enzyme are corrosive and have caused severe inflammatory changes in the form of erythema, edema and blistering.^{3,4}

Pemphigus Vulgaris (PV) and Bullous Pemphigoid (BP) must be thought during differential diagnosis. PV is an autoimmune blistering disease of great chronicity. Similarly BP is also autoimmune blistering disease of great chronicity. There are no acantholytic cells and eosinophils in Tzanck smear, hence both conditions are ruled out. Patient is healthy, hence he is not in the habit of taking drugs, and hence Bullous Drug Eruption is not considered.

To prevent these scarring incidents, regular health education is essential. Educate them to wear gloves (barriers) during handling such corrosive chemicals. Encouraging them to apply moisturizers (coconut oil, Vaseline), after wash also help to protect their body. Hospital admission has removed him from the cowshed atmosphere, and saline soaks, antibiotic creams helped to recover fast.

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