

Immunocompromised Cutaneous District Revisited: Florid Scabies in Paralytic Limb

Sir,

Immunocompromised cutaneous district (ICD) denotes regional immune dysregulation caused by failure of lymph flow or altered neuropeptide release.^[1] This dysregulation of the immune response at the cutaneous site can make the site either deficient in immune response leading to increase chances of opportunistic infections at that site than rest of the body (locus minoris resistentiae) or excessive that it makes the site more immune (locus majoris resistentiae).^[2] Isotopic nonresponse, Koebner's phenomenon, and Renbok phenomenon (inverse Koebner) are included under the concept of immunocompromised cutaneous district. Scabies is an infestation with the human itch mite *Sarcoptes scabiei* var. *hominis*.^[3] It is transmitted by direct human (or occasionally non-human) contact. The predisposing factors include poor personal hygiene, close contact, systemic, and local immunodeficiency. We observed an uncommon presentation of scabies in the region of ICD in a case with paralytic limb. A 26-year-old man presented with multiple itchy vesicles and papules clustered on left upper limb specifically involving left forearm and hand since 1 week [Figure 1]. Rest of the body was spared except abdomen and thighs that showed few excoriated papules without any vesicles. The patient was a case of post-traumatic monoplegia of left upper limb since 2 years. Potassium hydroxide (KOH) mount showed scabies mite. Dermoscopy examination revealed classic "jet contrail" sign characteristic of scabies. Skin biopsy from vesicle on left hand showed focal areas of spongiosis. The dermis showed mild periappendageal chronic inflammatory

infiltrate composed of predominantly lymphocytes and histiocytes and a few eosinophils [Figure 2]. The presence of solid pink eosinophilic fragments in stratum spinosum and granulosum represented chitinous exoskeleton of scabies mite [Figure 3a and b]. The patient was diagnosed as scabies with vesicles affecting the ICD. The patient was treated with 5% permethrin cream, applied overnight from neck to toe and was repeated after a week, along with antihistamines. Tablet ivermectin 12 mg stat dose was added after a week due to inadequate response. On follow-up after 2 weeks significant improvement was seen [Figure 4a and b]. Usual presentations of scabies in adults include burrows, pruritic papules, and inflammatory nodules. Sometimes, secondary impetiginisation and eczematization may also be seen. However in infants, children and immunocompromised individuals lesions are often vesicular or bullous.^[4] Vesicles are not usually seen in adults. In our case, vesicular lesions in an adult were atypical. The presence of mite on KOH mount, dermoscopy, and biopsy offered strong circumstantial evidence of florid scabies

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Figure 1: Pretreatment photograph – Multiple vesicles and papules present only on left hand (paralytic limb) with no involvement of right hand

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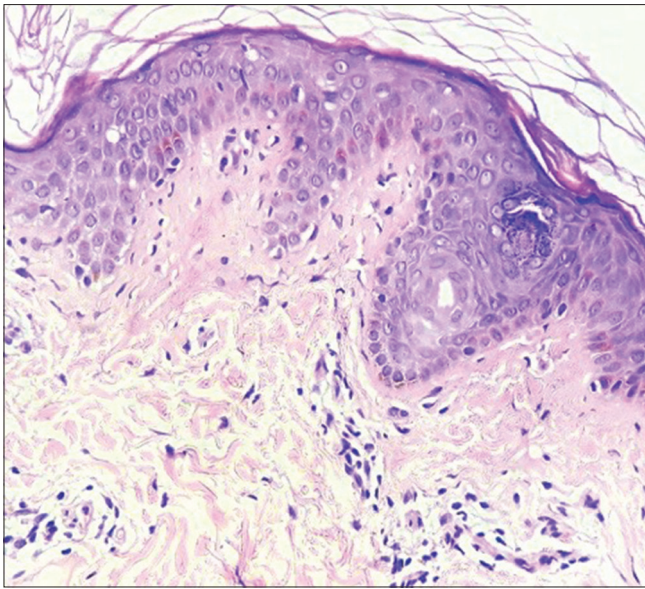


Figure 2: Focal areas of mild to moderate spongiosis seen within the epidermis with mild perivascular inflammatory infiltrate composed of predominantly lymphocytes, histiocytes, and a few eosinophils present in the upper dermis (20X, H and E)

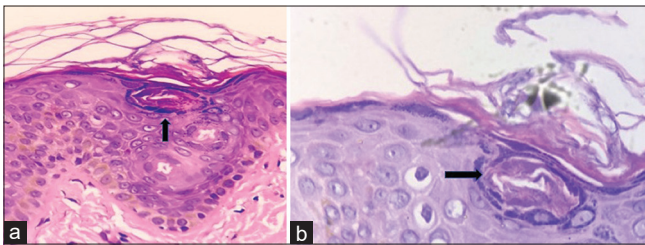


Figure 3: (a) Scabies mite (black arrow) visible on low power (40X, H and E) (b) Pink solid homogenous eosinophilic fragments representing scabies mite (black arrow) visible on high power (100X, H and E)



Figure 4: (a) Pretreatment photograph – multiple vesicles and papules present on left hand (paralytic limb) (b) Post treatment– significant improvement seen in vesicles and papules present on left hand 2 weeks after treatment

infestation. Such florid nature of scabies with multiple vesicles clustered over left limb reinforced the concept that paralytic limb offered least resistance to the development of scabies thus manifesting as an immunocompromised cutaneous district. This region is also known as Locus minoris resistentiae. Vesicles are also a feature of scabid, which is an autosensitization reaction to the mite present at a remote site but not at the site of reaction.^[5] However, scabid reaction is generalized, bilaterally symmetrical and mite is characteristically absent at the site of reaction.

Knowledge about this phenomenon may help to correctly identify atypical presentation of common disorders in the immunocompromised district, as was seen in our case. Through this case we wish to highlight that immunocompromised cutaneous district is a special site. Common disorders can have atypical presentations at this site. Hence, recognition of immunocompromised cutaneous district is important for both diagnostic as well as therapeutic purpose.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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