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Crusted Scabies in a Patient With Intellectual Disability

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An immunocompetent 42-year-old man presented to our outpatient department for generalized hyperkeratotic crusted skin lesions with pruritus. He was intellectually disabled and could not remember when his symptom started. His medical history included hypertension, dyslipidemia and diabetes mellitus. Physical examination showed widespread scaly, hyperkeratotic, greyish to yellowish crusted erythematous papules and plaques on the trunk, axillae, interdigital webs, inguinal area, scrotum, and legs (**Fig. 1**). The microscopic examination of the skin scrapings revealed a number of mites, eggs, and fecal pellets suitable for the diagnosis of crusted scabies (**Fig. 2**).

Crusted scabies was first reported in Norway in 1848 among patients with leprosy.[1] It is a highly contagious form of scabies which is a skin infestation caused by the mite *Sarcoptes scabiei var hominis*. It is more common in people who are immunosuppressed, intellectually disabled, and physically incapacitated.[1] Since the altered host response causes high proliferation of mites, typical clinical features of crusted scabies such as crusting and hyperkeratosis of skin appear.[2]

Unlike classic scabies, itching is mild or absent in crusted scabies. Clinically, it is characterized by fissured, thick, hyperkeratotic plaques with yellowish, greyish, or yellow-brownish crusts. It often involves bony prominences (i.e. finger articulations, elbows, knees, and iliac crest), nailbeds, soles, scalp, face, neck, genitalia, and, sometimes, the entire body.[1,3] The clinical differential diagnosis of crusted scabies include hyperkeratotic eczema, seborrheic dermatitis, psoriasis, Darier's disease, palmoplantar keratoderma, pityriasis rubra pilaris, atopic dermatitis, contact dermatitis, Erythrodermic mycosis fungoides, and Sézary syndrome.[3,4]

In Korea, crusted scabies is rare in the domestic literature with a total of 16 cases reported to date, since the first case was reported in 1974.[5-19] The majority of the patients were immunocompromised due to hematologic diseases[6,7,12] (e.g. hemolytic anemia, aplastic anemia, acute myeloid leukemia), use of systemic steroid and topical steroid,[9,10,13,14] or use of allopurinol.[17] One of the cases was reported in a physically incapacitated 55-year-old male with left-sided hemiplegia.[19] Two of the cases were similar to ours in terms of patient characteristics. They presented immunocompetent patients with intellectual disability or Down syndrome.[7,11]

Crusts from patients contaminate the immediate environment such as clothing, bedding, towels, curtains, floor, and furniture. Mites in these crusts can survive and remain infective

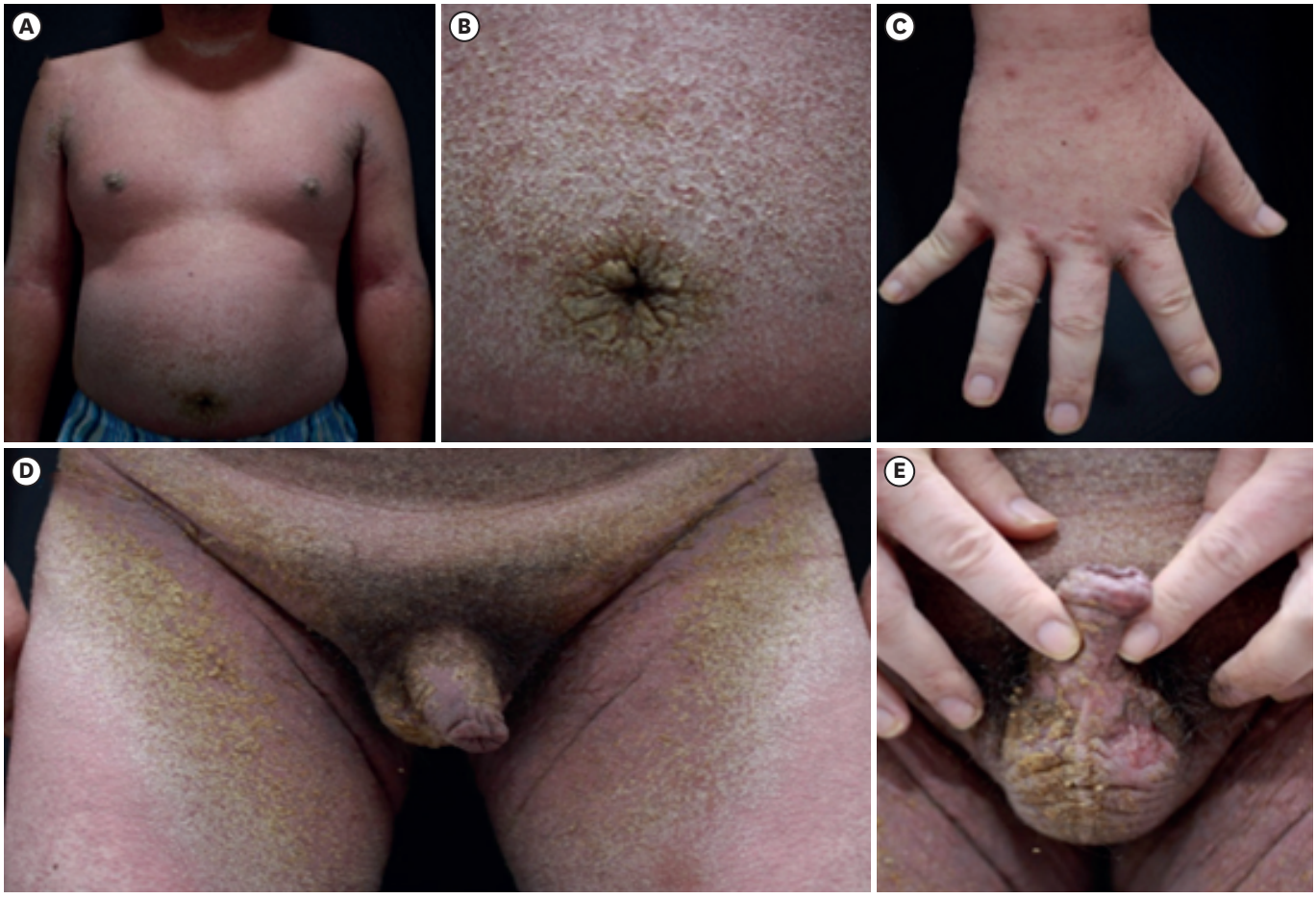

Fig. 1. A 42-year-old man with intellectual disability presented for generalized hyperkeratotic crusted skin lesions with pruritus. His medical history included hypertension, dyslipidemia and diabetes mellitus. (**A-E**) Physical examination showed widespread scaly, hyperkeratotic, greyish to yellowish crusted erythematous papules and plaques on the trunk, axillae, interdigital webs, inguinal area, scrotum, and legs. The patient was diagnosed with crusted scabies with microscopic examination of the skin scrapings. The images are published under agreement of the patient and his guardian.

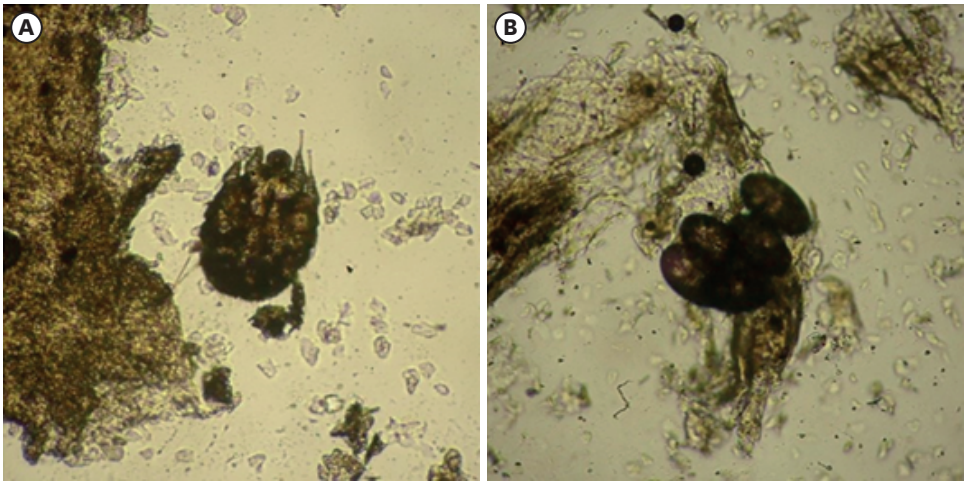

Fig. 2. The microscopic examination of the skin scrapings revealed (**A**) scabies mites and (**B**) eggs.

for 48 to 72 hours.[1] Therefore, potentially contaminated items should be machine washed with hot water or dry-cleaned and materials that cannot be washed should be sealed and

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stored in plastic bags.[2,20] All the patient's close contacts should be treated prophylactically. In addition, healthcare professionals and family members should avoid contact with the patient and the contaminated environment as much as possible, and wear disposable gloves and gowns during inevitable contact.[2,14,20] Especially, medical devices, which are one of the main transmission carriers, should not be shared with others.[8,14]

For successful treatment of crusted scabies, topical anti-scabietic agents alone are not sufficient. This is due to the high mite burden and the limited penetration of topical agents into hyperkeratotic lesions. Thus, oral ivermectin 200 micrograms/kg on days 1, 2, and 8 is recommended for crusted scabies with daily application of topical agents for 7 days.[20] 5% permethrin cream is the preferred topical agents and it should be applied overnight to all skin surfaces including clipped nails. Keratolytic agents such as 5-10% salicylic acid in petrolatum, 40% urea, or by soaking in a hot bath can also be helpful by eliminating hyperkeratotic crusts.[2] The microscopic examination of skin scrapings should be repeated 2 weeks after completion of treatment.[20]

In conclusion, we report a typical case of crusted scabies in a patient with intellectual disability. Early diagnosis is required to prevent the outbreak of scabies. In addition, aggressive treatment is recommended to prevent complications such as secondary infection or sepsis, especially for immunocompromised patients who are vulnerable to crusted scabies.

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