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Dominant Dystrophic Epidermolysis Bullosa with a Mutation in *COL7A1* Confirmed by Diagnostic Exome Sequencing

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Dominant dystrophic epidermolysis bullosa (DDEB) is a hereditary mechanobullous disorder characterized by skin fragility, blistering, atrophic scarring, milia, and dystrophic nails.[1] DDEB phenotypes vary substantially depending on the underlying mutation in the type VII collagen gene, *COL7A1*.[2] So far, numerous *COL7A1* mutations have been documented in DDEB patients.[2] Herein, we present a case of a glycine substitution mutation in *COL7A1* that has not yet been reported in Korea.

A 19-year-old man presented to our clinic with trauma-induced blistering from birth. Erythematous to purpuric atrophic scarring and milia were found on both lower legs, elbows, and dorsa of the hands and feet (Fig. 1). Nail dystrophy was also found on both fingernails and toenails (Fig. 1D, E). The pedigree of the family revealed three affected individuals (the proband's younger brother, mother, and maternal grandfather) with similar clinical manifestations. His medical history was unremarkable. Histopathological examination showed subepidermal separation with a flattened epidermis and mild perivascular lymphocytic infiltrate in the upper dermis (Fig. 2). Diagnostic exome sequencing was performed for molecular diagnosis. We identified a glycine substitution mutation (p.Gly2076Asp) in exon 75 of *COL7A1*, which is characteristic of DDEB.

We decided to share the details of this case because they are relevant to clinicians. First, if the clinical features and family history are suggestive of epidermolysis bullosa, skin biopsy and genetic testing (e.g., diagnostic exome sequencing) are required.[3] Precise diagnosis and subclassification are important for prognosis, genetic counseling, prenatal diagnosis, and planning of personalized therapies.[3] Second, DDEB phenotypes can be classified into one major subtype (generalized) and five rare subtypes (acral, pretibial, pruriginosa, nails only, and bullous dermolysis of the newborn).[1,2]

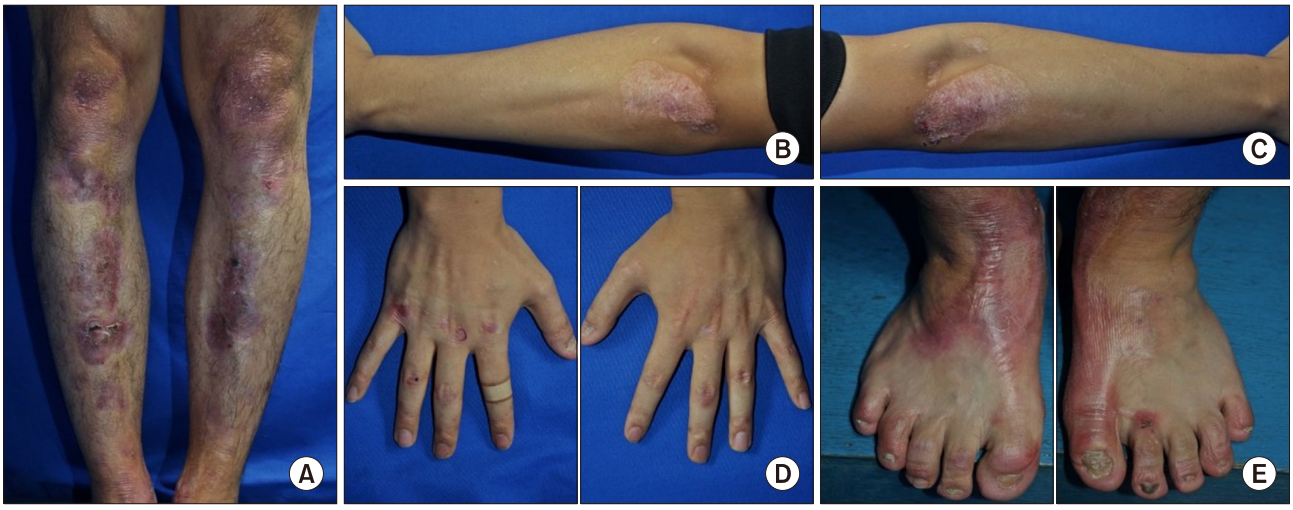

FIG. 1. Erythematous to purpuric scarring and milia on both lower legs, elbows, and the dorsa of hands and feet (A-E). Nail dystrophy on both fingernails and toenails (D, E).

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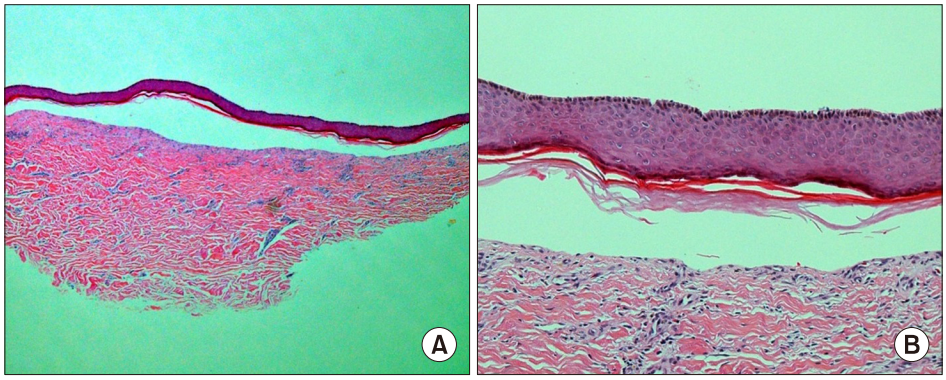

FIG. 2. Subepidermal separation with a flattened epidermis and mild perivascular lymphocytic infiltrate in the upper dermis (H&E staining; A, ×40; B, ×200).

In this case, the patient's clinical features were compatible with the generalized DDEB phenotype. Compared with generalized recessive dystrophic epidermolysis bullosa, generalized DDEB is associated with a lower risk of squamous cell carcinoma and a better prognosis.[1] Lastly, the glycine substitution mutation (p.Gly2076Asp) in DDEB might be associated with nail dystrophy. Our survey of five cases with a glycine substitution mutation (p.Gly2076Asp) in *COL7A1*[4,5] revealed nail dystrophy in three cases (60%). However, a more detailed large-scale study is needed to confirm the association between glycine substitution mutations (p.Gly2076Asp) and nail dystrophy.

In conclusion, this case is meaningful in that genetic testing could identify the exact mutation and help in the precise diagnosis and subclassification of dystrophic epidermolysis bullosa.

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CONFLICT OF INTEREST STATEMENT

None declared.

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