

DTE and morpheic BCC can exhibit basaloid cells in strands and sclerotic stroma. However, neither cellular atypia nor peripheral palisading are seen in DTE, and morpheic BCC is not usually associated with horn cyst formation¹. Also, in most DTE, retained or increased CK20-positive Merkel cells are found, but not in morpheic BCC⁵. Scar should be considered if multiple depressed macules appear, but it can be easily differentiated based upon its histopathology.

The treatment of choice is surgical excision and Mohs micrographic surgery is recommended to achieve clear surgical margins. In our case, because multiple lesions had developed and tumor strands extended into the deep dermis, total excision was performed to exclude malignancy. Therefore, initial proper biopsy is important to make an accurate diagnosis and treatment in patients with multiple scar-like depressed macules on face.

Herein, we report a rare case of multiple DTE, which should be differentiated from malignancy histopathologically.

REFERENCES

1. Calonje JE, Brenn T, Lazar AJ, McKee PH. McKee's pathology of the skin. 4th ed. Philadelphia: WB Saunders, 2011: 1445-1487.
2. Takiyoshi N, Nakano H, Kaneko T, Aizu T, Nakajima K, Akasaka E, et al. Multiple desmoplastic trichoepitheliomas with ossification and cholesterol deposition. *Clin Exp Dermatol* 2009;34:634-635.
3. Rustemeyer J, Zwerger S, Pörksen M, Junker K. Microcystic adnexal carcinoma of the upper lip misdiagnosed benign desmoplastic trichoepithelioma. *Oral Maxillofac Surg* 2013; 17:141-144.
4. Sellheyer K, Nelson P, Kutzner H, Patel RM. The immunohistochemical differential diagnosis of microcystic adnexal carcinoma, desmoplastic trichoepithelioma and morpheiform basal cell carcinoma using BerEP4 and stem cell markers. *J Cutan Pathol* 2013;40:363-370.
5. Costache M, Bresch M, Böer A. Desmoplastic trichoepithelioma versus morphoeic basal cell carcinoma: a critical reappraisal of histomorphological and immunohistochemical criteria for differentiation. *Histopathology* 2008;52:865-876.

1. Calonje JE, Brenn T, Lazar AJ, McKee PH. McKee's pathol-

<http://dx.doi.org/10.5021/ad.2016.28.3.413>



A Case of Terra Firma-Forme Dermatitis: Differentiation from Other Dirty-Appearing Diseases

Jungyoon Moon, Min-Woo Kim, Hyun-Sun Yoon, Soyun Cho, Hyun-sun Park

Department of Dermatology, SMG-SNU Boramae Medical Center, Seoul, Korea

Dear Editor:

Terra firma-forme dermatosis (TFFD), which derives its term from the Latin phrase 'terra-firma' meaning dry land,

is a rare skin disorder characterized by hyperpigmentation resembling dirt-like brown patches^{1,2}. Only small cases have been published, but it is important to understand this

Received June 23, 2015, Revised July 15, 2015, Accepted for publication July 20, 2015

Corresponding author: Hyun-sun Park, Department of Dermatology, SMG-SNU Boramae Medical Center, 20 Boramae-ro 5-gil, Dongjak-gu, Seoul 07061, Korea. Tel: 82-2-870-2880, Fax: 82-2-870-0714, E-mail: snuhdm@gmail.com

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Copyright © The Korean Dermatological Association and The Korean Society for Investigative Dermatology

disease entity because TFFD may be relatively common in clinical practice but can be easily misdiagnosed^{1,2}. The patient was a 13-year-old girl with an asymptomatic dirt-like hyperpigmentation on her neck, which had been present for 2 months (Fig. 1). The lesion has not disappeared despite repetitive scrubbing with common detergents and water. She denied any history of eczema or incidents of trauma to the area, and did not use any cosmetics. No evidence of diabetes mellitus or excessive body weight was observed. The lesion was completely removed by hard scrubbing with alcohol sponges (Fig. 2). No recurrence was seen after 2 weeks of follow-up. TFFD has been largely ignored in the literature due to unawareness or indifference, but TFFD may in fact be common in clinical practice^{1,2}. The etiology of TFFD remains unknown, but one hypothesis demonstrates TFFD as the result of the delayed maturation of keratinocytes with melanin retention, and the accumulation of sweat, sebum, and microorganisms. This combination may lead to buildup and retention of adhesive dirt-like scales¹. TFFD is easily confused with similar diseases such as dermatosis neglecta or acanthosis nigricans³. One of the point of differentiation with other diseases is TFFD usually affects children and young adults

with normal hygiene habits^{1,2}. Additionally, TFFD mainly occurs on the face, neck, or ankles, especially posterior to the medial or lateral malleolus². However, history of exposure to an unclean environment or underlying comorbidities causing non-washing behavior implies dermatosis neglecta, which is removable with routine detergents⁴. Also, TFFD can be accompanied by acanthosis nigricans in obese and diabetic patients. In these cases, TFFD can be removed by alcohol rubbing, while acanthosis nigricans remains unresolved by such measures⁵. Furthermore, TFFD should be distinguished from other dermatoses, including confluent and reticulated papillomatosis, pityriasis versicolor, ichthyosis, and postinflammatory hyperpigmentation¹. Typical TFFD cases rarely require biopsy, but histopathological findings may aid in the diagnosis of challenging cases. Characteristic histology of TFFD demonstrates acanthosis, papillomatosis, and prominent lamellar hyperkeratosis with orthokeratotic whorls⁵. The recurrence of TFFD is known to be rare. Previous research has reported that more than one-fifth of patients undergo an endocrine evaluation or receive a prescription for topical corticosteroids before visiting a dermatologist². Therefore, in typical cases of young healthy patients with a dirt-like brown appearance on the face, neck, or ankles despite normal hygiene habits, TFFD should be considered early, and alcohol scrubbing should be attempted first to prevent unnecessary diagnostic procedures and inappropriate treatments. In some cases, more aggressive efforts with alcohol were required to remove the hyperpigmentation, so vigorous force should be applied while scrubbing the lesion⁵. Here, we report a successfully diagnosed and treated case of TFFD. It is important for clinicians to be aware of TFFD as it is often misdiagnosed or underreported.



Fig. 1. A dirt-like hyperpigmented patch lesion on the patient's anterior neck (before alcohol swabbing).

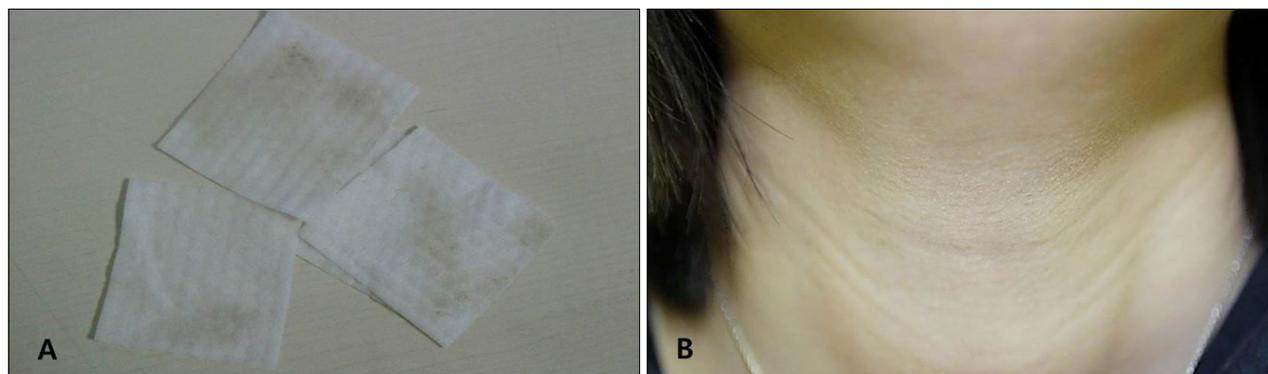


Fig. 2. (A) Alcohol swabs after hard scrubbing. (B) Dirt-like hyperpigmentation removed after hard scrubbing with an alcohol swab.

REFERENCES

1. Martín-Gorgojo A, Alonso-Usero V, Gavrilova M, Jordá-Cuevas E. Dermatitis neglecta or terra firma-forme dermatosis. *Actas Dermosifiliogr* 2012;103:932-934.
2. Berk DR. Terra firma-forme dermatosis: a retrospective review of 31 patients. *Pediatr Dermatol* 2012;29:297-300.
3. Berk DR. Acanthosis nigricans of the ears or terra firma-forme dermatosis? *Ann Dermatol* 2012;24:218-219.
4. Onder M, Kaya B. Dermatitis neglecta: a dermatosis of dirty appearance. *Int J Dermatol* 2014;53:e402-e404.
5. Akkash L, Badran D, Al-Omari AQ. Terra Firma forme dermatosis. Case series and review of the literature. *J Dtsch Dermatol Ges* 2009;7:102-107.