

although bacteria are usually not detected<sup>3</sup>.

Once the diagnosis of infected emboli in patients carrying vascular devices is made, empiric broad-spectrum antibiotic therapy should start immediately<sup>4</sup>. Imaging studies should be performed to locate the infected focus for optimal surgery.

Our patient presented erythematous plaques due to infectious emboli with no evident of clinical signs of sepsis. Histopathology aids us to establish a diagnosis. Unfortunately, the patient died after the surgery.

Erythematous plaques eruption should be taken into account as a clinical form of cutaneous septic emboli.

## REFERENCES

1. Delgado-Jiménez Y, Fraga J, Fernández-Herrera J, García-Diez A. Septic vasculopathy. *Actas Dermosifiliogr* 2007;98 Suppl 1:22-28.
2. Choffray A, Flageul B, Dubertret L, Viguier M. Erysipelas-like dermatitis of the legs revealing aspergilloma of the maxillary sinus. *Ann Dermatol Venereol* 2007;134:851-854.
3. Carlson JA, Chen KR. Cutaneous pseudovasculitis. *Am J Dermatopathol* 2007;29:44-55.
4. Legout L, Sarraz-Bournet B, D'Elia PV, Devos P, Pasquet A, Caillaux M, et al. Characteristics and prognosis in patients with prosthetic vascular graft infection: a prospective observational cohort study. *Clin Microbiol Infect* 2012;18:352-358.

<http://dx.doi.org/10.5021/ad.2013.25.3.394>

# The Relation of Onychomatricoma to Onychodermis in the Nail Unit

Dong-Youn Lee

*Department of Dermatology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea*

Dear Editor:

Onychomatricoma is a very rare tumor of the nail unit. It is originally reported to be a benign tumor of the nail matrix as the name implies<sup>1</sup>. However, histopathologically, it is a fibroepithelial tumor with well-established features. Recently, based on its histopathological and immunohistochemical features, the concept of epithelial onychogenic tumor with onychogenic mesenchyme is being suggested for this peculiar mixed tumor<sup>2</sup>. Nevertheless, the authors mention that the term onychomatricoma is short and sanctioned by usage, and justifies such statement.

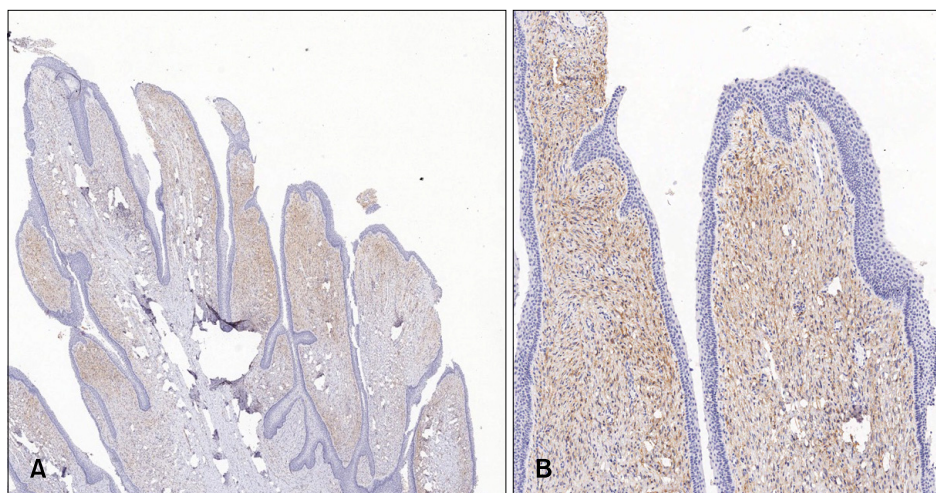
We recently demonstrated the presence of specialized mesenchyme containing onychofibroblasts beneath the nail matrix and nail bed<sup>3,4</sup>. Based on this finding, we proposed new terminology onychodermis for specialized mesenchyme because it is histologically and immunohistochemically distinct from the dermis of other parts of the nail unit.

This study evaluates the relation of onychomatricoma to onychodermis in the nail unit we performed CD10 immunohistochemistry in one case of onychomatricoma sample (a kind gift from Dr Robert Baran and Dr Josette André). Immunohistochemical staining was performed using the

Received October 9, 2012, Accepted for publication November 22, 2012

**Corresponding author:** Dong-Youn Lee, Department of Dermatology, Samsung Medical Center, Sungkyunkwan University School of Medicine, 81 Irwon-ro, Gangnam-gu, Seoul 135-710, Korea. Tel: 82-2-3410-3543, Fax: 82-2-3410-3869, E-mail: dylee@skku.edu

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.



**Fig. 1.** Immunohistochemical staining of CD10 in onychomatricoma. CD10 was diffusely expressed in the stroma of onychomatricoma. (A) Low-power view ( $\times 40$ ), (B) high-power view ( $\times 200$ ).

monoclonal antibody of CD10 (1 : 50, clone 56C6; Novocastra, Newcastle, UK). Normal nail unit is being used as a control.

As reported previously, CD10 is strongly expressed in the onychodermis below the nail matrix and nail bed within normal nail unit (data not shown). In the onychomatricoma case, CD10 is being expressed diffusely in the stroma (Fig. 1).

Onychomatricoma is a subungual tumor which consists of epithelial onychogenic tumor with onychogenic mesenchyme. Based on its components and location, the onychodermis, which is located below the nail matrix and nail bed, might be related to the occurrence of the onychomatricoma. In addition, in our case, the CD10, which is a marker of the onychodermis, is expressed in the stroma of the onychomatricoma, supporting that onychomatricoma might derive from the onychodermis. According to a previous study using organotypic cultures, the fibroblasts around the nail matrix induced hard keratin expressions in the non-nail-matrix keratinocytes through epithelial-mesenchymal interactions<sup>5</sup>. Thus, the onychodermis containing onychofibroblasts may play an important role in nail formation through epithelial-mesenchymal interactions. Epithelial lesion in onychomatricoma might be induced by mesenchymal tumor occurring in the onychodermis. To deduce, the onychodermis might be involved in the histogenesis of the onychomatricoma. In conclusion, onychomatricoma seems to be closely related to the onychodermis. It might be a derivative from onychoderms.

## ACKNOWLEDGMENT

This work was supported by a Samsung Biomedical Research Institute grant (C-B1-119-2).

## REFERENCES

1. Baran R, Kint A. Onychomatricoma. Filamentous tufted tumour in the matrix of a funnel-shaped nail: a new entity (report of three cases). *Br J Dermatol* 1992;126:510-515.
2. Perrin C, Langbein L, Schweizer J, Cannata GE, Balaguer T, Chignon-Sicart B, et al. Onychomatricoma in the light of the microanatomy of the normal nail unit. *Am J Dermatopathol* 2011;33:131-139.
3. Lee DY, Yang JM, Mun GH, Jang KT, Cho KH. Immunohistochemical study of specialized nail mesenchyme containing onychofibroblasts in transverse sections of the nail unit. *Am J Dermatopathol* 2011;33:266-270.
4. Lee DY, Park JH, Shin HT, Yang JM, Jang KT, Kwon GY, et al. The presence and localization of onychodermis (specialized nail mesenchyme) containing onychofibroblasts in the nail unit: a morphological and immunohistochemical study. *Histopathology* 2012;61:123-130.
5. Okazaki M, Yoshimura K, Fujiwara H, Suzuki Y, Harii K. Induction of hard keratin expression in non-nail-matrix keratinocytes by nail-matrix fibroblasts through epithelial-mesenchymal interactions. *Plast Reconstr Surg* 2003;111:286-290.