of melanocyte and melanin pigment was observed. A traditional histologic feature of vitiligo is epidermal loss of melanocytes, but a recent research by Kim et al.⁵ imply that residual melanocytes, although in lower level, may exist in vitiligo lesion. Unfortunately the relationship between the amount of residual melanocyte and degree of repigmentation is not yet established. Secondly, the vitiligo lesion showed complete pigmentation after treatment. Vitiligo itself is not an incurable disease, but all the reports of vitiligo with concomitant AN have failed to induce repigmentation.

In conclusion, when AN is accompanied by hypopigmentation assessing the amount of melanocyte by means of skin biopsy can be helpful in predicting the potential degree of repigmentation after vitiligo treatment. This finding does not seem to affect the course of AN and thus treatment of underlying cause of AN would still be required.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

REFERENCES

1. Harman M, Akdeniz S, Cetin H, Tuzcu A. Acanthosis nigricans with vitiligo and insulin resistance. *Br J Dermatol* 2000; 143:899-900.
2. Garzitto A, Ricceri F, Pescitelli L, Tripo L, Prignano F. Vitiligo masks malignant acanthosis nigricans in a woman with ovarian cancer. *Int J Dermatol* 2015;54:1300-1302.
3. Shen Z, Hao F, Wei P. HAIR-AN syndrome in a male adolescent with concomitant vitiligo. *Arch Dermatol* 2009; 145:492-494.
4. Blume-Peytavi U, Spiekler T, Reupke H, Orfanos CE. Generalised acanthosis nigricans with vitiligo. *Acta Derm Venereol* 1996;76:377-380.
5. Kim YC, Kim YJ, Kang HY, Sohn S, Lee ES. Histopathologic features in vitiligo. *Am J Dermatopathol* 2008;30:112-116.

<https://doi.org/10.5021/ad.2017.29.2.258>

A Case of Exophytic Pilomatricoma Clinically Resembling Keratoacanthoma

Seung Hyun Chun, Chang Min Kim, Ji Min Lee, Il-Hwan Kim

Department of Dermatology, Korea University Ansan Hospital, College of Medicine, Korea University, Ansan, Korea

Dear Editor:

Pilomatricoma is a benign cutaneous tumor which presents as solitary, slow-growing, firm nodule with normal overlying skin¹. Exophytic pilomatricoma, an uncommon subtype, shows distinctive features such as rapid develop-

ment, reddish exophytic appearance, surface alteration suggestive of perforation, and relatively shallow location¹. Here we present a case of exophytic pilomatricoma which resembled keratoacanthoma.

An 89-year-old female patient visited dermatology clinic

Received January 27, 2016, Revised April 8, 2016, Accepted for publication May 11, 2016

Corresponding author: Il-Hwan Kim, Department of Dermatology, Korea University Ansan Hospital, 123 Jeokgeum-ro, Danwon-gu, Ansan 15355, Korea. Tel: 82-31-412-5186, Fax: 82-31-412-4208, E-mail: kumcihk@korea.ac.kr

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

Fig. 1. Dome-shaped mass in the glabella with brownish crust in the central portion. Mixture of erythematous and whitish color can be observed in the peripheral area.

because 3-month-old mass on her glabella started to increase in size abruptly. The lesion was firm dome-shaped mass with brownish crust in the center. The peripheral area of the mass showed irregular mixture of erythematous and whitish color (Fig. 1). At initial visit the mass measured approximately 10 millimeters in diameter. The patient did not recall any history of trauma prior to lesion appearance. Under the impression of keratoacanthoma partial wedge biopsy was performed.

Upon histologic examination, instead of keratin-filled crater and epithelial proliferation the mass was surrounded by basaloid cells with eosinophilic ghost cells in the central portion. These findings led us to suspect pilomatricoma rather than keratoacanthoma. For further evaluation complete surgical excision was conducted. The resected tumor revealed multiple masses in dermis layer with histologic findings equivalent to the previous specimen (Fig. 2). Considering the visual appearance and the histologic features we diagnosed the mass as exophytic subtype of pilomatricoma.

Pilomatricoma is a common tumor especially among children but its accurate preoperative diagnosis is challenging due to clinical resemblance to various other tumors. In a study of 346 pilomatricomas by Pirouzmanesh et al.² more than 70% of the cases were mistaken for 17 other tumors. Nevertheless, keratoacanthoma was not in the list of possible misdiagnosis. This finding suggests that clinical resemblance to keratoacanthoma is much more unusual. So far, it has been reported in only 2 cases^{3,4}.

In some cases of exophytic pilomatricoma when elimination of the tumor content occur they are more often referred to as perforating pilomatricoma. This distinctive feature can accompany varying degrees of epidermal ulceration. When degree of ulceration is minimal the phenomenon is referred to as transepidermal elimination. As there are more than a dozen cases reported so far this sub-

Fig. 2. Multiple masses within dermis. Eosinophilic ghost cells can be seen in the center and basaloid cells in the peripheral portion (H&E, $\times 40$).

type seems to be more common compared to exophytic pilomatricoma⁵.

Clinical features distinct from typical pilomatricoma include rapid growth and shallow location. These findings can also be found in cases of perforating pilomatricomas⁵. Due to rapid growth of the tumor clinicians have a shorter time to diagnosis⁵. This can be thought to contribute to the low incidence of both exophytic and perforating pilomatricoma.

The treatment of choice for pilomatricoma is surgical excision. Although some authors reported a successful treatment with shave biopsy, electrocautery, and curettage the recurrence rate with these methods has not been studied yet¹. With surgical excision the recurrence rate is low. In one study average time to recurrence was 1.6 years, indicating the need for long term follow-up monitoring after the treatment².

CONFLICTS OF INTEREST

The authors have nothing to disclose.

REFERENCES

1. Holme SA, Varma S, Holt PJ. The first case of exophytic pilomatricoma in an Asian male. *Pediatr Dermatol* 2001;18: 498-500.
2. Pirouzmanesh A, Reinisch JF, Gonzalez-Gomez I, Smith EM, Meara JG. Pilomatricoma: a review of 346 cases. *Plast Reconstr Surg* 2003;112:1784-1789.
3. Faust HB, Clark RE, Kamino H. Hyperkeratotic nodule. Keratoacanthomalike pilomatricoma. *Arch Dermatol* 1996; 132:573, 576.

4. Kang HY, Kang WH. Guess what! Perforating pilomatricoma resembling keratoacanthoma. *Eur J Dermatol* 2000;10:63-64.
5. Kost DM, Smart DR, Jones WB, Bain M. A perforating pilomatricoma on the arm of an 11-year-old girl. *Dermatol Online J* 2014;20:22371.

matricomal horn on the arm of an 11-year-old girl. *Dermatol Online J* 2014;20:22371.

<https://doi.org/10.5021/ad.2017.29.2.260>

Treatment of Recalcitrant Pyoderma Gangrenosum with Ulcerative Colitis by Adalimumab Injection

Jin-Hyup Lee, In-Kyu Chang, Hae-Eul Lee, Myung Im, Young-Joon Seo, Jeung-Hoon Lee, Young Lee

Department of Dermatology, Chungnam National University School of Medicine, Daejeon, Korea

Dear Editor:

Pyoderma gangrenosum (PG) is an uncommon, inflammatory, and non-neoplastic skin disorder characterized by painful chronic skin ulcers¹. Recent reports have indicated that recalcitrant PG can be effectively treated with immunomodulating agents that exhibit activity against tumor

necrosis factor (TNF)- α ^{2,3}. We herein report a case of a patient with ulcerative colitis (UC) with recalcitrant PG who failed numerous trials of immunosuppressive agents and etanercept but dramatically responded to adalimumab. A 20-year-old woman presented with a 5-year history of recurrent tender, necrotizing ulcers on the left lower leg.

Fig. 1. (A) Initial cutaneous lesion. Five-year history of erythematous, recurrent, painful nodules and ulcers on the left lower leg. (B) Despite several months of treatment, there was only a minimal therapeutic effect. (C) After the 13th injection of etanercept, the pain and ulceration dramatically improved.

Received January 21, 2016, Revised May 9, 2016, Accepted for publication May 17, 2016

Corresponding author: Young Lee, Department of Dermatology, Chungnam National University Hospital, 282 Munhwa-ro, Jung-gu, Daejeon 35015, Korea. Tel: 82-42-280-7706, Fax: 82-42-280-7706, E-mail: resina20@cnu.ac.kr

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