REFERENCES

1. Zouboulis CC. Acne and sebaceous gland function. Clin Dermatol 2004;22:360-366.
2. Lee WJ, Chae SY, Ryu HS, Jang YH, Lee SJ, Kim DW. Inflammatory cytokine expression and sebum production after exposure of cultured human sebocytes to ultraviolet a radiation and light at wavelengths of 650 nm and 830 nm. Ann Dermatol 2015;27:163-170.
3. Shaheen B, Gonzalez M. Acne sans P. acnes. J Eur Acad Dermatol Venereol 2013;27:1-10.
4. Lesnik RH, Kligman LH, Kligman AM. Agents that cause enlargement of sebaceous glands in hairless mice. II. Ultraviolet radiation. Arch Dermatol Res 1992;284:106-108.
5. Akitomo Y, Akamatsu H, Okano Y, Masaki H, Horio T. Effects of UV irradiation on the sebaceous gland and sebum secretion in hamsters. J Dermatol Sci 2003;31:151-159.
6. Skiba B, Neill B, Piva TJ. Gene expression profiles of TNF-alpha, TACE, furin, IL-1beta and matrilysin in UVA- and UVB-irradiated HaCat cells. Photodermatol Photoimmunol Photomed 2005;21:173-182.
7. Lee WJ, Park KH, Sohn MY, Lee WC, Lee SJ, Kim DW. Ultraviolet B irradiation increases the expression of inflammatory cytokines in cultured sebocytes. J Dermatol 2013;40:993-997.
8. Krämer C, Seltmann H, Seifert M, Tilgen W, Zouboulis CC, Reichrath J. Characterization of the vitamin D endocrine system in human sebocytes in vitro. J Steroid Biochem Mol Biol 2009;113:9-16.
9. Iinuma K, Sato T, Akimoto N, Noguchi N, Sasatsu M, Nishijima S, et al. Involvement of Propionibacterium acnes in the augmentation of lipogenesis in hamster sebaceous glands in vivo and in vitro. J Invest Dermatol 2009; 129:2113-2119.
10. Siniavskiĭ IuA, Tsoĭ NO. Influence of nutritional patterns on the severity of acne in young adults. Vopr Pitan 2014; 83:41-47.

http://dx.doi.org/10.5021/ad.2016.28.5.669

Primary Cutaneous Apocrine Carcinoma

Seung-Hee Loh, Yu-Jin Oh, Bark-Lynn Lew, Woo-Young Sim

Department of Dermatology, Kyung Hee University College of Medicine, Seoul, Korea

Dear Editor:

Primary cutaneous apocrine carcinoma (PCAC), a subtype of sweat gland carcinoma, is an extremely rare malignant neoplasm[1]. Most of these neoplasms arise in regions of high apocrine gland density, particularly in the axilla, but

Received December 2, 2014, Revised September 18, 2015, Accepted for publication October 6, 2015

Corresponding author: Bark-Lynn Lew, Department of Dermatology, Kyung Hee University Hospital at Gangdong, 892 Dongnam-ro, Gangdong-gu, Seoul 05278, Korea. Tel: 82-2-440-7329, Fax: 82-2-440-7336, E-mail: bellotte@hanmail.net

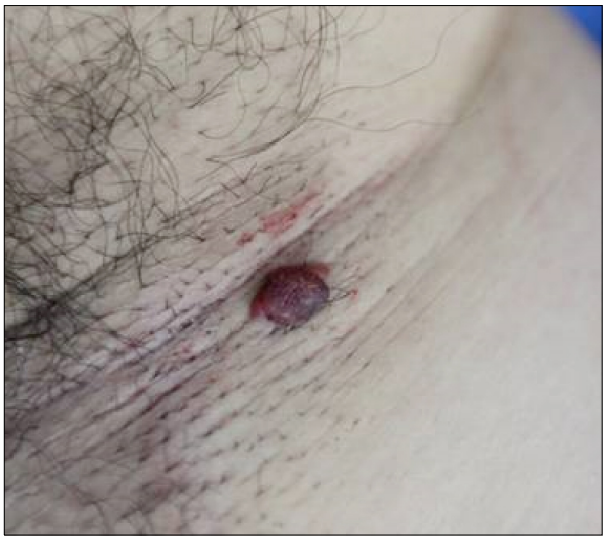

Fig. 1. The 1.2×1.0 cm sized flesh to reddish colored pedunculated nodule on the right axilla.

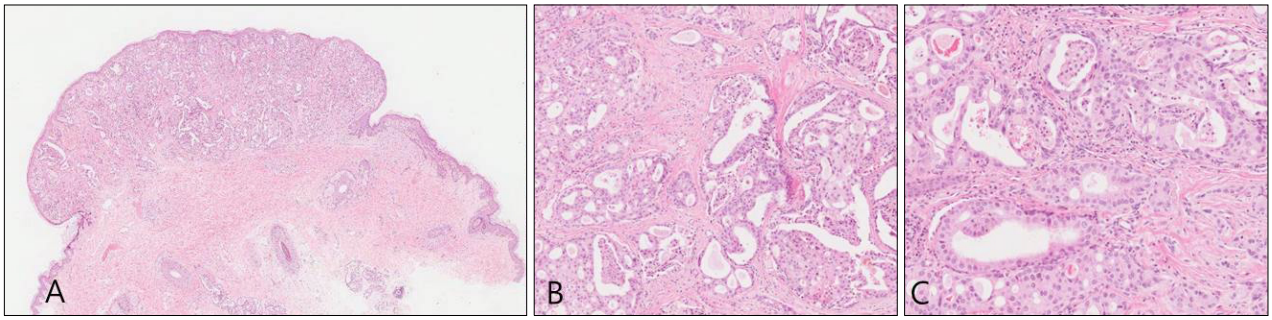

Fig. 2. (A) Scanning view of the specimen. (B) Specimen showed a well-to-moderately differentiated adenocarcinoma located in the dermis containing ductal and glandular structures with apocrine features (H&E, ×100). (C) Dense cellular nests were composed of cells with abundant eosinophilic cytoplasm, vesicular nuclei and central large nucleoli. Some lumen showed decapitation (H&E, ×200).

lesions can also occur elsewhere on the skin. Frequently they are indolent and slowly developing, but some are rapidly progressive and aggressive[2]. Wide, local excision with clear margins, with or without lymph node dissection is the standard treatment[3].

A 44-year-old man visited our department because of a painless nodule on the right axilla, which had been present for more than 2 years. Physical examination revealed a flesh colored bean sized pedunculated nodule (Fig. 1). Bilateral breast examination was unremarkable and ultrasound examination showed no mass. The nodule was locally excised and histopathologic feature revealed a well-to-moderately differentiated adenocarcinoma located in the dermis containing ductal and glandular structures. The tumor cells contained abundant eosinophilic cytoplasm and showed decapitation. Luminal layers were composed of cuboidal or columnar secretory cells with atypia and a dilated lumen containing eosinophilic secreted materials (Fig. 2). The immunohistochemical staining study showed that the tumor cells were positive for GCDEF-15, cytokeratin (CK) 5/6 and CK7. Estrogen and progesterone receptor were not detected. No lymphatic emboli were found and there was no evidence of ectopic breast tissue. Based on the clinical and histopathological characteristics, the final diagnosis of PCAC was made.

Apocrine carcinoma was first reported by Horn[4] in 1944 and since then, only few cases have been reported in the literature. Cutaneous apocrine carcinoma has a slight male predominance and usually occurs in fifth decade of life. This tumor usually develops de novo, but can arise from other benign tumors such as apocrine adenoma or hyperplasia[5]. Adnexal carcinomas that develop de novo are difficult to diagnose clinically and require histopathologic evaluation. Histologically, these must be differentiated from cutaneous metastasis from breast[3]. The tumor is characterized by cells with abundant eosinophilic cytoplasm, eccrine basally located nuclei, and decapitation secretion in the luminal cells. GCDFP-15 has been known to stain apocrine rather than eccrine glands in axillary and anogenital skin[2]. CK5/6 and CK7 are useful to differentiate a PCAC from a metastasis. CK5/6 positivity has been reported in 80% of PCAC whereas 6.66% of metastasis. Compare to such characteristics of PCAC described above, metastatic mammary adenocarcinomas are often positive for estrogen and progesterone receptors[5].

Apocrine carcinomas are initially locally invasive, and systemic dissemination is often associated with regional lymph node metastasis[3]. Therefore the treatment of choice is wide local excision with clear margins. In our case, there was no metastasis including lymph nodes which was confirmed by ultrasonography and whole body positron emitting tomography/computed tomography and the lesion was removed by local excision with clear margins. In the 13 months since this operation, the patient has been well without local recurrence or metastasis.

REFERENCES

1. Paties C, Taccagni GL, Papotti M, Valente G, Zangrandi A, Aloi F. Apocrine carcinoma of the skin. A clinicopathologic, immunocytochemical, and ultrastructural study. Cancer 1993;71:375-381.
2. Pucevich B, Catinchi-Jaime S, Ho J, Jukic DM. Invasive primary ductal apocrine adenocarcinoma of axilla: a case report with immunohistochemical profiling and a review of literature. Dermatol Online J 2008;14:5.
3. Chamberlain RS, Huber K, White JC, Travaglino-Parda R. Apocrine gland carcinoma of the axilla: review of the literature and recommendations for treatment. Am J Clin Oncol 1999;22:131-135.
4. Horn RC. Malignant papillary cystadenoma of sweat glands with metastases to the regional lymph nodes. Surgery 1944; 16:348-355.
5. Jun IS, Haw CR, Kim NI. Case reports: apocrine gland carcinoma. Ann Dermatol 1996;8:253-256.