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Eccrine Poroma Arising within Nevus Sebaceous

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Key Words
Adnexal neoplasm · Adnexal tumor · Eccrine poroma · Nevus sebaceous

Abstract
Nevus sebaceous is a congenital, benign hamartomatous lesion, characterized by a yellowish to skin-colored, hairless, verrucous plaque on the head and neck region. In later life, a secondary tumor, either benign or malignant, can develop within nevus sebaceous. Eccrine poroma developing on nevus sebaceous is extremely rare. There are few case reports of eccrine poroma developing within nevus sebaceous. We report a case of a 30-year-old female who presented with a congenital, hairless, verrucous, yellowish lesion on the scalp and an erythematous nodule arising within the yellowish lesion for 8 months. Her clinical presentation and histopathological findings were compatible with nevus sebaceous and eccrine poroma.

Case Presentation

A 30-year-old female presented with a hairless, yellowish lesion on her scalp that had already been noticed at birth. Eight months earlier, she developed an asymptomatic red nodule arising on the yellowish plaque. There was no history of bleeding on the lesion. She was otherwise healthy and had no history of previous trauma of the scalp.

Physical examination revealed a solitary, slightly verrucous erythematous nodule, 3 cm in diameter and covered with scale and crust arising on a hairless, yellowish verrucous plaque measuring 3 × 6 cm, located on the left frontoparietal region of the scalp (fig. 1). There was no cervical, submandibular, and occipital lymphadenopathy. Other physical examinations were unremarkable.

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Four-millimeter punch biopsies were performed on the yellowish plaque and red nodule for routine histological examination. The skin biopsy specimen obtained from the yellowish verrucous plaque showed mild epidermal papillomatosis associated with increased sebaceous gland and abortive hair follicles, consistent with nevus sebaceous (fig. 2). Another biopsy specimen obtained from the erythematous nodule revealed that the tumor consisted of uniformly small cuboidal cells, forming anastomosing bands and ductal lumen embedded in a fibrovascular stroma, compatible with eccrine poroma (fig. 3a, fig. 3b). According to the clinical and histopathologic findings, the dermatologic diagnosis was eccrine poroma arising within nevus sebaceous.

Our patient was referred to a plastic surgeon for wide excision of the lesion, which was completely excised with a good cosmetic result. No recurrence was observed in a 3-month follow-up.

Discussion

Nevus sebaceous, also known as nevus sebaceous of Jadassohn or organoid nevus, is a benign congenital hamartoma of cutaneous structures including the epidermis, sebaceous glands, sweat glands, and hair follicles [1, 2]. Nevus sebaceous was first described by Josef Jadassohn in 1895 and further divided in 3 phases (infancy, puberty and adulthood) by Mehregan and Pinkus in 1965 [3]. It usually presents at birth as skin-colored to yellowish, waxy, hairless plaques or linear lesions mainly on the head and neck and especially on the scalp. At puberty, the lesion tends to thicken and becomes papillomatous and verrucous due to androgen effects on the sebaceous glands [1, 4].

Diagnosis can be made based on the characteristic clinical finding, but skin biopsy should be performed if the diagnosis is ambiguous [5]. Histology of nevus sebaceous is characterized by papillomatous or verrucous epidermal hyperplasia and numerous, irregular sebaceous lobules opening directly into the epidermis, with heterotopic apocrine glands and abortive/immature hair follicles [4].

Nevus sebaceous is typically benign and remains unchanged throughout life. However, other tumors can develop within nevus sebaceous during adolescence and adulthood (21.4%) [1]. The majority of secondary tumors are benign. Trichoblastoma is the most common benign tumor to grow within nevus sebaceous (7.4%), followed by syringocystadenoma papilleferum (5.2%), apocrine/eccrine adenoma (2.1%), and trichilemmoma (1.1%) [1]. Basal cell carcinoma is the most common malignant tumor (1.1%) developing from nevus sebaceous [1]. Poroma arising on nevus sebaceous is extremely rare. To date, there are few case reports of poroma, including apocrine poroma and eccrine poroma developing within nevus sebaceous [2, 6, 7].

Eccrine poroma is a benign tumor originating from an intraepidermal portion of the eccrine sweat duct that was first described in 1956 by Goldman et al. [8]. It typically presents as solitary, slow-growing, bright red, skin-colored or pigmented, painful or pruritic, pedunculated, sessile papule or nodule occurring in middle-aged or elderly patients without sexual predilection [6, 9]. Eccrine poroma is commonly located on the sole (65%) and palm (10%) [6]. Interestingly it can occur on almost any cutaneous surface containing sweat glands, namely the neck, chest, nose, scalp, and ear pinna [6]. Scalp lesions are uncommon [2] and usually are asymptomatic, showing more pigmented tendency than lesions on the palm or sole [10]. The histologic features of eccrine poroma demonstrates a well-circumscribed tumor composed of proliferative, compact cuboidal keratinocytes with small monomorphic nuclei and scant eosinophilic cytoplasm (poroid cells) radiating from the basal layer of the

epidermis into the dermis with highly vascularized stroma. Necrosis en masse or clear cell change may be observed [11]. The clinical course of eccrine poroma is benign, with low risk of malignant transformation into porocarcinoma or recurrence [11].

Differential diagnoses of red nodular lesions on the scalp include benign and malignant tumors commonly arising on nevus sebaceous (e.g., trichoblastoma, syringocystadenoma papilleferum, basal cell carcinoma, etc.), chronic infection (e.g. nontuberculous mycobacterium infection), and wart.

Surgical excision is the treatment of choice for nevus sebaceous. Full-thickness excision should be performed [5]. Mohs micrographic surgery may be offered in cases of nevus sebaceous with concomitant malignant tumor [12]. Timing for excision is controversy [5]. Due to the low incidence of malignant tumor arising on nevus sebaceous, prophylactic excision is unnecessary [12]. Several dermatologists suggest that it is best to perform excision when there is evidence of secondary tumor or when nevus sebaceous has a great impact on cosmetic appearance [12–14]. Alternative treatments for nevus sebaceous include fractional laser, dermabrasion, or photodynamic therapy that have variable outcomes, as nevus sebaceous may not be completely removed through these modalities [5, 15–20]. Monitoring for malignant transformation is mandatory in all cases with incomplete removal of nevus sebaceous [4, 11].

In conclusion, we report a case of eccrine poroma arising within nevus sebaceous. Although poroma rarely arises on nevus sebaceous, it should be considered in the differential diagnosis of secondary neoplasm accompanying nevus sebaceous.

Statement of Ethics

The patient gave written informed consent.

Disclosure Statement

The authors declare no conflicts of interest.

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Fig. 1. Solitary erythematous, slightly verrucous nodule, 3 cm in diameter, arising on a yellowish, verrucous plaque measuring 3 × 6 cm on the left frontoparietal scalp.

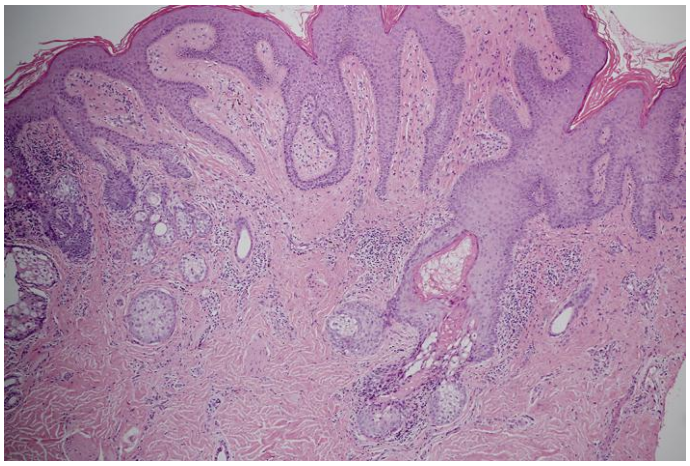

Fig. 2. Histopathologic findings demonstrate mild epidermal papillomatosis associated with increased sebaceous gland and abortive hair follicles. HE. Original magnification ×100.

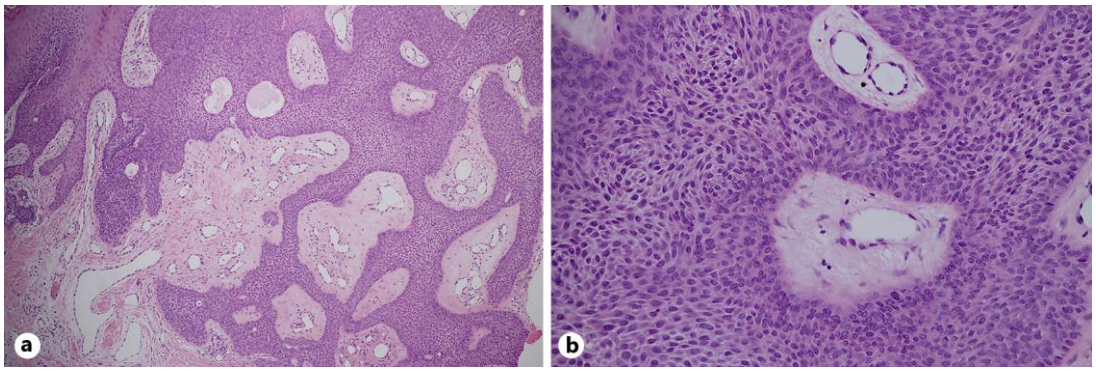

Fig. 3. Histopathologic findings showing that the tumor consists of uniformly small cuboidal cells, forming anastomosing bands and ductal lumen emanating from the epidermis embedded in a fibrovascular stroma. **a** HE. Original magnification ×100. **b** HE. Original magnification ×400.