

A clinical and histopathological study of nevus sebaceous

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Abstract *Objective* To study the clinical and histopathological features of nevus sebaceous (NS).

Methods We selected 20 cases of nevus sebaceous for clinical and histopathological evaluation.

Results Regarding the clinical appearance of lesions verrucous plaques were seen in 60% patients, papules in 25% and patches in 15%. All of the lesions showed abortive/immature hair follicles characterized by cords of undifferentiated, basaloid cells resembling the embryonic stages of hair follicle.

Conclusion

NS is a hamartoma consisting of various elements indigenous to the organ and not merely the sebaceous units.

Key words

Nevus sebaceous; histopathological; sebaceous glands; tumours.

Introduction

In 1895, Jadassohn first described nevus sebaceous (NS), a circumscribed hamartomatous lesion predominantly composed of sebaceous glands.¹ However, Pinkus designated this disease 'organoid nevus', as the changes are not confined only to the sebaceous glands but also involve proliferative changes of sweat glands and hair follicles.² The lesion is interesting because its morphologic appearances vary with the age of the lesion.³ As a consequence, there is a great likelihood of missing the diagnosis if only the classical findings of a well-developed NS are looked for. It is also associated with a range of secondary tumors, both benign and malignant. The incidence of these tumors increases with

age, particularly after puberty. They include benign adnexal tumors such as trichoblastoma, syringocystadenoma papilliferum, trichilemmoma, sebaceoma, nodular hidradenoma, hidrocystoma, and eccrine poroma. Malignant cutaneous neoplasms are less commonly seen and include basal cell carcinoma and to a lesser extent, squamous cell carcinoma, trichilemmal carcinoma, sebaceous carcinoma, porocarcinoma, and apocrine carcinoma.⁴

The present study aimed to study the clinical and histopathological features of 20 cases of nevus sebaceous.

Methods

We selected 20 cases of nevus sebaceous for the study. Written informed consent of all the patients was taken for the study. Prior permission of the hospital ethical committee was taken for the study. Routine investigations and

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cutaneous biopsy was performed in all the patients.

Results

The clinical and histopathological data are shown in **Tables 1** and **2**. The age group of the patients ranged from 8 years to 50 years. The mean age of the patients was 24 years. Males outnumbered females and male: female was 1.5: 1. Regarding the clinical appearance of lesions verrucous plaques were the most frequent presentation seen in 60% patients (**Figure 1**), followed by papules in 25% and patches in 15%. All of them showed abortive/immature hair follicles characterized by cords of undifferentiated, basaloid cells resembling the embryonic stages of hair follicle. Germ and papilla formation was seen. Twenty percent of cases showed immature sebaceous glands characterized by cells with larger nuclei, eosinophilic cytoplasm, and indistinct cell borders. The sebaceous glands also showed hyperplasia and crowding. Twenty percent of the cases showed dilated, prominent apocrine glands and fifteen percent showed prominent, dilated eccrine glands. Epidermal changes in the form of acanthosis, papillomatosis, and hyperkeratosis were seen in eighty percent cases. Dilated keratin-filled infundibula were seen in 25% of the cases. The most striking feature was the absence of normal terminal hair follicles within the confines of the lesion, sharply demarcated from the adjacent skin which was seen in all the cases.

Discussion

Nevus sebaceous is usually present at birth; and in its most common location, viz., the scalp, it is manifested by a well-defined area of alopecia with smooth surface and yellow to orange discoloration.



Figure 1 Nevus sebaceous in a 15-year-old girl.

Table 1 Clinical appearance of lesions (n=20).

Clinical appearance	N (%)
Verrucous plaques	12 (60)
Papules	5 (25)
Patches	3 (15)

Table 2 Histopathological features of nevus sebaceous.

Histopathological feature	N (%)
Immature hair follicles	20 (100)
Acanthosis	16 (80)
Papillomatosis	16 (80)
Hyperkeratosis	16 (80)
Dilated keratin filled infundibula	5 (25)
Immature sebaceous glands	4 (20)
Apocrine gland dilatation	4 (20)
Eccrine gland hyperplasia	3 (15)

In the infantile stage, the epidermis is only slightly acanthotic and may be hyperpigmented. The hair follicles are small, incompletely formed, and are often represented by solid cords of undifferentiated basaloid cells. The sebaceous glands are not prominent. One of the characteristic findings observed in the current series was the absence of normal terminal hair follicles within the lesion although the same may be seen in the rest of the epidermis. In our opinion, this feature may also be useful to assess if the biopsy is representative.

The second stage in the life history of the organoid nevus occurs during adolescence and is characterized by an increase in the thickness of the lesion, which may then show

smooth surface nodularity or verrucous hyperkeratosis.⁵ At this stage, histologic findings include verrucous epidermal hyperplasia, which was the commonest clinical appearance in this study. This overlaps with the histologic picture of epidermal nevus and can be differentiated from it by the presence of malformations of the dermis, most prominently hyperplasia and malpositioning of the sebaceous glands.⁶ The hair follicles remain small and primordial. The sebaceous glands are now numerous and hyperplastic. Many of the lesions may also exhibit apocrine glands with dilated lumina as well as hyperplasia of eccrine glands, features seen in 20% and 15% of cases respectively in this series. These divergent features are in keeping with a common embryological origin of the pilosebaceous-apocrine unit, and any of them may predominate over the other. This should not mislead the pathologist.

The third stage occurs during the adult life when epidermal hyperplasia, large sebaceous glands, and ectopic apocrine glands dominate the histologic findings. The hair follicles remain primordial.⁷ The third stage is also distinguished by development of a variety of benign and malignant adnexal tumors. Benign tumors are seen in about 13.6%, while malignancies are met with in 1% of the cases of NS.^{8,9} Trichoblastoma and syringocystadenoma papilliferum are the commonest benign tumors encountered in NS.^{10,11} Malignant cutaneous neoplasms are less common, inclusive of basal cell carcinoma and, to a lesser extent, squamous cell carcinoma.¹²

Conclusion

NS is an organoid nevus, i.e. a hamartoma consisting of various elements indigenous to the organ and not merely the sebaceous units. Normal terminal hair follicles are characteristically absent in the lesion although the same may be seen in rest of the epidermis, a feature of diagnostic importance, not usually highlighted in literature. Though malignancy is uncommon, a cautious histologic analysis is mandated, especially if there are clinical changes in a lesion.

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