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Case Report

Pigmented Streaks in the Scar of a Nevus: The Role of Dermatoscopy in Differential Diagnosis of Reactive Hyperpigmentation and Recurrent Nevus

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Abstract

Observation: A 34 year-old female patient was presented for a pigmented lesion developed on the scar of a previously excised nevus on the back. Dermatoscopy revealed pigmented black streaks of the lesion clinically observed in a banded pattern. The patient was diagnosed as reactive hyperpigmentation with clinical, dermatoscopical and histopathological findings and the role of dermatoscopy was revised in differential diagnosis of reactive phenomenon and recurrent nevus.

Introduction

Pigmented lesions may appear in the excision scars of melanocytic or nonmelanocytic benign or malignant tumours in a similar percentage [1]. Although scar pigmentation is observed frequently, there are few reports on this issue in the literature. Melanotic pigmentations in scars can be either secondary to a reactive process due to the underlying scar tissue or to a recurrence of the melanocytic lesion, such as a nevus or melanoma excised previously. Recently, certain features observed dermatoscopically in addition to the clinical findings have been reported to be important in differentiation of the recurrent melanocytic lesions in the scar tissue [2].

Case Report

A 34 year-old female patient was admitted for a pigmented lesion developed on a scar on the back. She was learnt to be operated for a nevus at the same site the previous year.

Dermatological examination revealed a 5cm lineer scar at the left paramedian region by the sixth thoracal vertebra on the back. A 2 x 4mm band-like homogenous, darkly pigmented macular lesion perpendicular to the scar was present within the scar tissue (**Figure 1**).

Figure 1. Pigmented macule perpendicular to the scar of a previously excised congenital melanocytic compound nevus

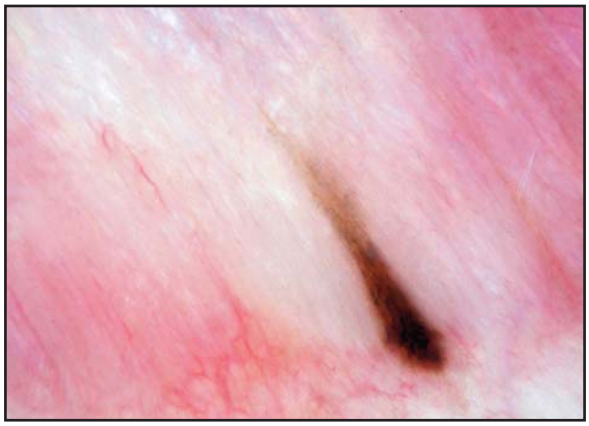

Figure 2. Pigmented black streaks on homogenous brownish background

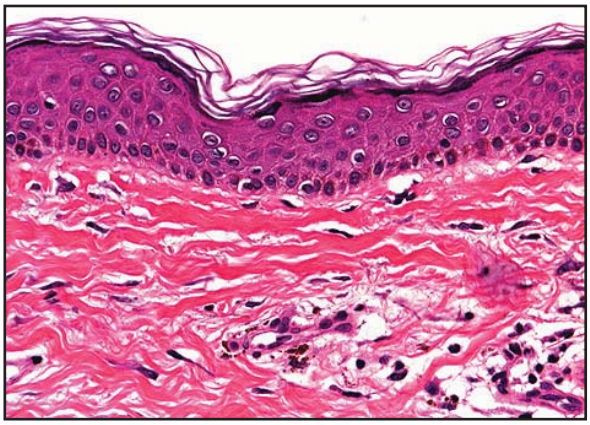

Figure 3. Hyperpigmentation of the basal keratinocytes without proliferation of melanocytes and macrophages in the dermis (H&E, x 200)

Pigmented black streaks were observed by dermatoscopy of the macular lesion which displayed a homogenous brownish background (**Figure 2**).

The histopathological findings of the clinically atypical nevus totally excised previously was found to be a congenital melanocytic compound nevus reported to be completely removed. The excision of the pigmented macular lesion within the postoperative scar tissue revealed increased collagen bundles in the dermis with macrophages and hyperpigmentation of the basal keratinocytes without proliferation of melanocytes (**Figure 3**).

Discussion

In the present case, suggested clinical diagnoses were reactive pigmentation or a recurrent nevus arising in the scar of a previously excised congenital nevus. Both of these pigmented lesions tend to occur in young females, mainly on the posterior trunk and median time after the primary surgery was reported to be 4 to 8 months, although ranging between 1 and 14 months in some cases [**1, 2**]. In the presented case the localisation of the lesion was also at the back of the patient and the period between the surgery and appearence of the pigmentation was about 8 months.

The reactive pigmented lesions in the scars could be clinically classified as macular, banded or diffuse pigmentations [**1, 2**]. The presence of certain dermatoscopical features were reported to be valuable clues for differentiation between the recurrent melanocytic lesions in addition to the clinical findings. The banded pattern observed clinically in the present case was a streak perpendicular to the main axis of the scar that can be detected with dermatoscopy. Regular pigmented network and streaks, mostly being thin continuous or broad homogeneous were found to be associated with reactive pigmentation whereas atypical pigment network, irregular streaks, globules and heterogeneous pigmentation were strongest dermatoscopic features of recurrent nevi [**2, 3**]. Therefore, dermatoscopical finding of the broad pigmented streak in the scar in the absence of globules in a clinically banded lesion confirmed us to exclude recurrent nevus in differential diagnosis of the present case.

To our experience, reactive pigmented streaks in the scar generally present lighter color in clinical and dermatoscopical appearance due to the lack of a melanocytic proliferation. Interestingly the color was dark brown in this case. Thus, one must also be alerted to differentiate this kind of melanocytic lesion with such unusual feature from melanoma, especially if the pathological result of the first excision was unknown because any suspicious signs may not be detected initially in recurrent melanoma, while it can usually extend beyond the scar meanwhile [**2, 3**]. In addition, although the pigmentation that arises in the postoperative scars of melanocytic tumours, especially melanoma, may lead to the suspicion of a recurrence, and that in some cases it was difficult to differentiate melanocytic hyperplasia from the first stages of melanoma *in situ* [**4**], pigmented streaks in melanoma surgical scars were reported to be

benign in the long-term follow-up supported by histopathology [**5**].

Reactive pigmentations may occur on scars of any type, and have well-defined histological attributes that allow their separation from recurrent nevi. The presence of bands clinically was reported to be highly associated with reactive pigmentation histologically [**2**]. Recurrent nevi were characterized by the presence of nests of melanocytes at the dermoepidermal junction or in the dermis whereas reactive pigmented lesions present melanocytic hyperplasia of a variable degree [**1, 2, 6**] although basal layer hyperpigmentation without melanocytic hyperplasia was also reported [**5**]. The absence of nests or masses of melanocytes and cytologic atypia made us confirm the histopathological diagnosis of reactive pigmentation in the present case. It may be considered that the scar tissue could be responsible for the pigmentation by means of an induction process on the melanocytes of the overlying epidermis irrespective of the excised tumor of either melanocytic or nonmelanocytic origin [**1, 2**].

In conclusion, pigmentations in scars following several months after the excision of melanocytic lesions are relatively frequent which can be reactive secondary to the stimulation of keratinocytes and melanocytes by the underlying scar, or recurrence of the melanocytic lesion excised before. Dermatoscopic examination of the pigmentation in excision scar of melanocytic lesion provides useful information about the origin of the pigmentation in addition to the clinical findings.

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