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Evolving clonal nevus—case report with serial digital dermatoscopy and dermatopathology

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ABSTRACT We present a case of a clonal nevus arising from a previously banal melanocytic nevus over a 15-month period on the central back of a 30-year-old woman in a primary care skin cancer practice in Melbourne, Australia. Clinical, dermatoscopic and dermatopathologic images are presented. A search of the literature has discovered no previously published dermatoscopy images of an evolving clonal nevus.

Introduction

The term "clonal nevus" is used to describe a variant of benign melanocytic nevus that histologically exhibits a localized proliferation of pigmented epithelioid dermal melanocytes within an otherwise ordinary nevus [1]. Alternative names for these nevi include inverted type A nevus and nevus with focal clonal hyperplasia. Clonal nevi have been described as variants of combined nevi [2].

Clonal nevi have been well described histologically and Huyhn et al have published several clinical photographs of a clonal nevus [2]. A search of the literature has not discovered any previously published dermatoscopic images, however. There are certainly no serial dermatoscopic images of a clonal nevus arising from a previously banal nevus over time.

Case presentation

A 30-year-old woman presented for a routine annual skin check in a primary care skin cancer clinic in the outer south eastern suburbs of Melbourne, Australia. She gave no personal or first-degree family history of melanoma or non-melanoma skin cancer. She had worked on the ski fields in Australia for three seasons during the preceding five years. An irritated benign acral nevus had been excised from the third/fourth webspace of her right foot the previous year.

A whole body skin examination was undertaken with the aid of a Heine Delta 20 non- polarizing dermatoscope (Heine Optotechnik, Herrshing, Germany). Digital clinical and dermatoscopic images were taken with a Medicam 800 Fotofinder non-polarizing camera (Fotofinder Systems GmbH,

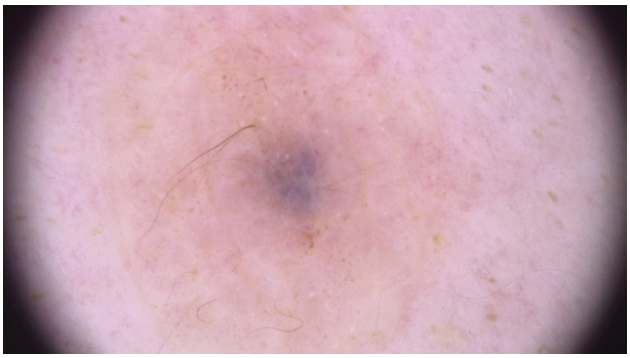

Figure 1. June 2014—Dermatoscopy showing a central focus of blue/grey pigmentation consistent with a clonal nevus. (Copyright: ©2014 Inskip, Magee.)

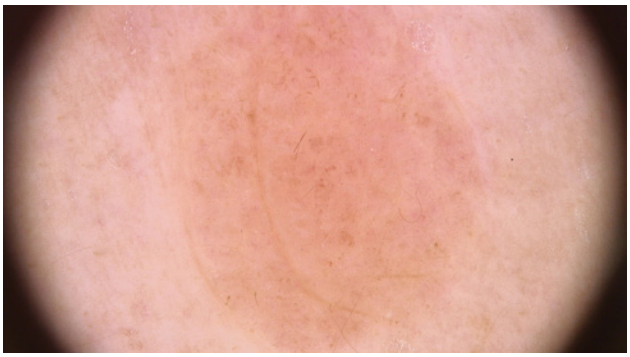

Figure 2. March 2013—Dermatoscopy of the same lesion 15 months previous. Clinically this is a homogeneous benign melanocytic nevus with no trace of central blue/grey pigmentation. (Copyright: ©2014 Inskip, Magee.)

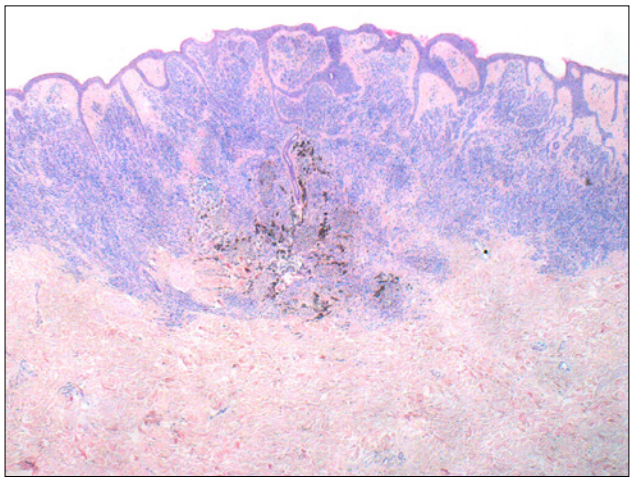

Figure 3. Low power image shows a well circumscribed, wedge-shaped intradermal melanocytic proliferation comprised predominantly of bland nevus cells, however, with a central zone of more epithelioid cells, surrounded by a rim of hyperpigmented melanophages. (Copyright: ©2014 Inskip, Magee.)

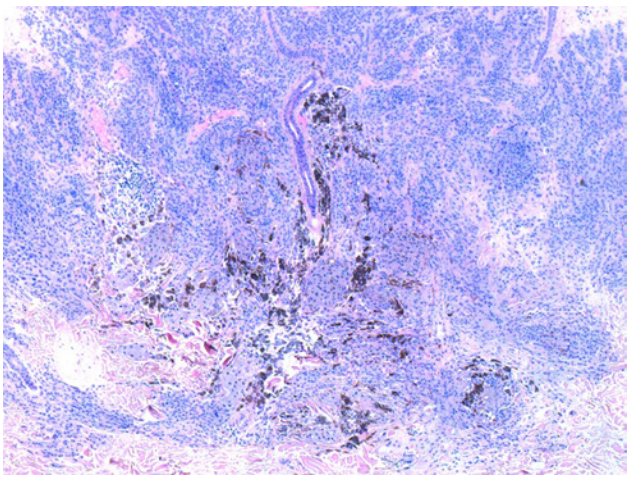

Figure 4. Intermediate power view of central clone of epithelioid cells rimmed by melanophages and background of ordinary bland nevus cells. (Copyright: ©2014 Inskip, Magee.)

Aichner, Birnbach, Germany), the dermatoscopy images being at 20x magnification. Examination showed Fitzpatrick skin type 2 with solar lentigines of the face, upper trunk and distal limbs. There were 5-10 benign pattern melanocytic nevi on her skin surface.

The lesion in question was located on the central back, was slightly domed and measured 6 mm diameter. It was a uniform pale tan color with a centrally located blue, grey circular area 1mm in diameter (Figure 1). This was consistent with the clinical description of a clonal nevus by Huynh et al, "tan with a focus of blue/grey to blue/black pigmentation" [2]. However, on referring to the digital dermoscopic image of the same lesion taken 15 months earlier, there was no central focus of pigmentation of any kind in this image. There had just been a clinically banal benign melanocytic nevus (Figure 2). The central focus of pigmentation had appeared over the last 15 months. The differential diagnosis thus consisted of benign clonal nevus or possible melanoma in view of the documented changes on serial digital dermatoscopy. In one study, Bolognia et al concluded that "a small percentage of 'small dark dots' within melanocytic nevi are due to melanoma", finding 3 (5%) of 59 such nevi to be melanoma [3]. An excisional biopsy was performed using an 8 mm punch excision, and the specimen was submitted for assessment by a specialist dermatopathologist.

Histology

Examination of the histological sections revealed an intradermal proliferation comprised predominantly of bland nevus cells that matured with descent and tracked down around adnexal structures consistent with a congenital pattern. Centrally, there was a small population of somewhat more epithelioid appearing cells surrounded by pigmented melanophages. The cells did not exhibit marked pleomorphism, and no mitotic activity was noted. The findings were consistent with a benign clonal nevus (Figures 3 to 6).

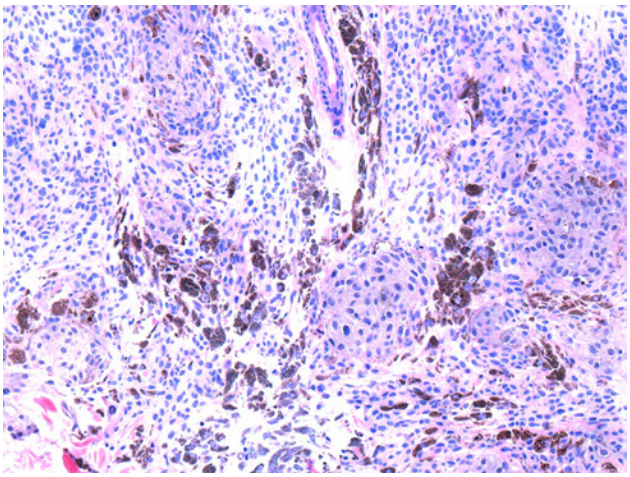

Figure 5. Higher power view of more eosinophilic epithelioid central clone of melanocytes with interspersed melanophages. Background smaller basophilic nevus cells are seen at the periphery. (Copyright: ©2014 Inskip, Magee.)

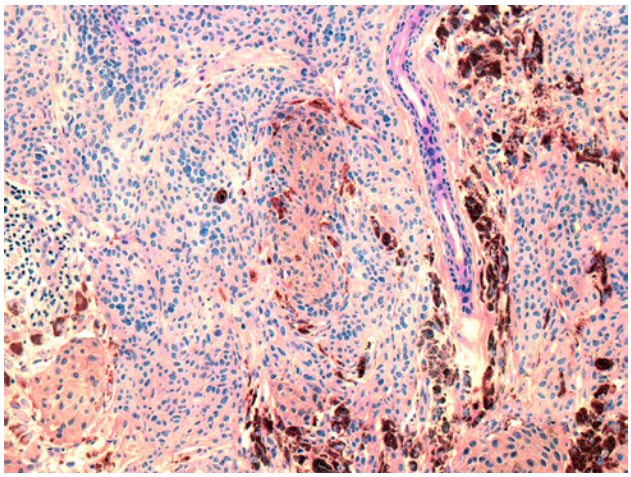

Figure 6. Further higher power view of more eosinophilic epithelioid central clone of melanocytes with interspersed melanophages. (Copyright: ©2014 Inskip, Magee.)

Conclusion

A search of the literature has discovered no previously published dermatoscopy images of an evolving clonal nevus. The images we present thus add a further small piece of information to our overall knowledge base of this melanocytic nevus variant.

In the case we present the clonal nevus appears to have arisen from a pre-existing clinically banal melanocytic nevus over some 15 months. It is noted that the five cases of clonal nevi presented by Huyhn et al were between the ages of 37 and 80 years, all older than the case we present [2]. It is postulated that this dynamic process of evolution may occur in the first three decades of life. A recent case report of clonal nevus on the back of a 9-year-old girl is consistent with this hypothesis [3].

Clonal nevi are important, as they can be confused with melanoma [4]. Serial digital dermatoscopy is a relatively new diagnostic tool and appears helpful in recording the dynamic nature of melanocytic nevi. The authors feel it is important to publish dermatoscopic images such as ours to as wide an audience as possible to aid in greater understanding of this particular variant of benign melanocytic nevi in the future.

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