A progressive and painless pink pimple

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With sufficient training and expertise, clinicians can use dermoscopy to improve diagnostic accuracy for melanocytic lesions and other common skin tumours

Case presentation

A 63-year-old office worker presented with a painless nodule on his right upper arm that had arisen in recent months (Figure 1). The lump had not been present five months earlier when he attended for his most recent full skin examination. He had fair skin with many solar lentigines, moderate numbers of actinic keratoses and few naevi, none of which were dysplastic. There was a past history of three nonmelanoma skin cancers, all on sun-exposed sites, and a family history of melanoma affecting his mother.

On examination, the patient had a firm, pink to red dome-shaped nodule over his right upper arm (Figure 2). It was a discrete lesion that clearly stood out with a smooth nonulcerated surface, measuring 8 x 6 mm.

Dermoscopy demonstrated a pale pink background with a suggestion of central inverse network but no other clear melanocytic structures such as branched streaks, dots or globules. Inverse or negative network refers to a whitish net with darker coloured holes (typically pink, red, blue or brown) rather than a brown net with white holes, and this serves as a subtle but valuable marker that the lesion is melanocytic. The most striking dermoscopic feature was the presence of polymorphous vessels (Figures 3a and b). The specific vascular features included a combination of glomerular and hairpin vessels with lesser numbers of comma-shaped and irregular linear vessels. There was no obvious pigment.

The provisional diagnosis was a tumour, subtype unclear, and an excisional biopsy was performed. The differential diagnosis included nonmelanoma skin cancer, atypical fibroxanthoma, Merkel cell carcinoma, amelanotic melanoma or a cutaneous metastasis. Benign entities such as a pyogenic granuloma or spontaneous keloid scar were also considered as possibilities.

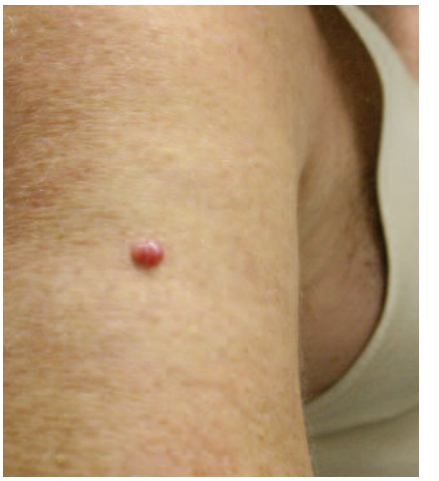

Figure 1. Nodule on the right upper arm.

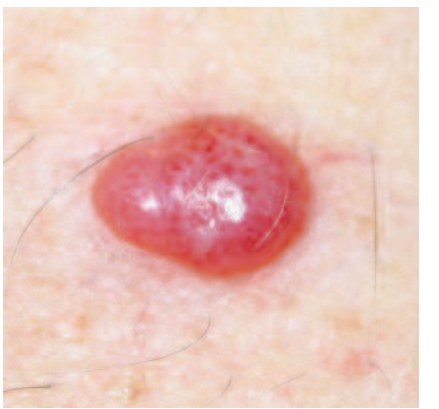

Figure 2. Close up view of the shiny pink-red nodule with visible vascular structures.

Diagnosis

Histopathology demonstrated a 2.3 mm level III nodular melanoma.

Discussion

This case study highlights the typical presentation of an amelanotic nodular melanoma, which most often occurs in older men with sun-damaged skin and few naevi. A tumour of this depth is associated with a significant risk of metastatic disease and a 10-year survival rate of approximately 64%.

More than half of nodular melanomas are hypomelanotic,[1] as in our case. Although they are mostly self-detected, they show rapid growth similar to this

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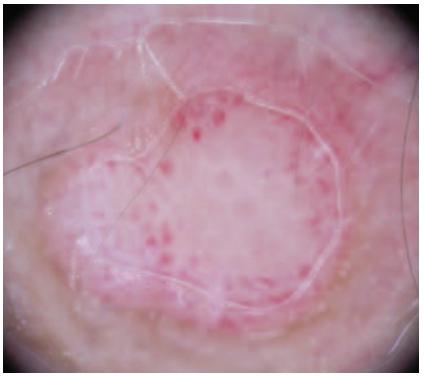

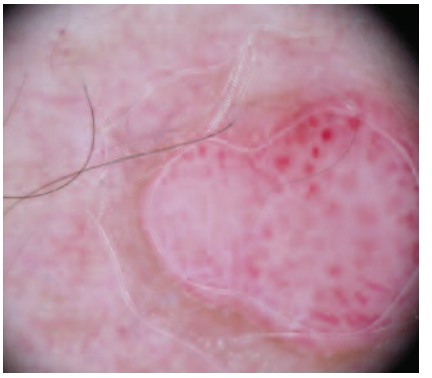

Figures 3a and b. Dermoscopy demonstrating a polymorphous vascular pattern with an inverse network.

case and are therefore frequently thick at presentation. A recent Australian study estimated that the average vertical growth rate for nodular melanomas is four times that of superficial spreading melanoma (0.49 mm/month compared with 0.12 mm/month).[2]

Unfortunately nodular melanomas usually defy the ABCD diagnostic criteria (i.e. asymmetry, border irregularity, colour variation and diameter greater than 6 mm) and are not easily classified using the standard dermoscopic diagnostic algorithms. This applies also to hypomelanotic and amelanotic melanomas, and the clues to these diagnoses are the subject of this discussion.

Generally, a diagnosis of amelanotic melanoma is a default consideration when the typical dermoscopic features of other common benign and malignant neoplasms are absent. Such features include the arborising telangiectasia of basal cell carcinomas, the marginal comma-like vessels of dermal naevi, the milia-like cysts of seborrhoeic keratoses, the central scar-like patch and surrounding delicate pigment network of dermatofibromas or the lacunar vessels of haemangiomas. A squamous cell carcinoma is usually a keratinising tumour with surface hyperkeratosis, but poorly differentiated variants may occasionally present as a raw ulcerated pink nodule. Pyogenic granulomas will usually have a collarette at the base of the tumour and bleed profusely, and keloid scars are frequently very firm and itchy.

The presence of pigment, either clinically or only dermoscopically, should prompt consideration of a melanocytic tumour (and a hypomelanotic melanoma if pigment is visible only on dermoscopy). In hypomelanotic tumours, the pigment usually occurs at the periphery of the lesions.

In the case of completely absent pigment, the vascular features must be relied upon to reach a provisional diagnosis of amelanotic melanoma. The most specific features of amelanotic melanoma in studies to date include a white-pink or milky-pink background, and the presence of dotted/pinpoint or linear irregular vessels – so called polymorphous vessels. Any excess pressure during the examination will blanch and obscure the visualisation of these vascular features, so copious amounts of immersion fluid or a clear gel (such as water-based surgical lubricant) should be used and the area examined gently.

An additional feature that will sometimes provide a clue to invasive hypo - melanotic or amelanotic melanoma is the presence of an inverse or negative pigment network (as seen in our case). This represents elongated hypopigmented rete ridges and is found in approximately 20% of invasive melanomas.

Key point

Almost 10% of melanomas are hypomelanotic,[3] and this diagnosis should be considered for any pink or red skin lesion that is progressive or changing. Even in expert hands, these tumours pose a great challenge diagnostically. While the dermoscopic features alone may not always be diagnostic in these tumours, the presence of subtle marginal pigment, polymorphous vessels, a milky-pink background or inverse network should prompt the clinician to consider such a diagnosis. MT

References

1. Chamberlain AJ, Fritschi L, Kelly JW. Nodular melanoma: patients' perceptions of presenting features and implications for earlier detection. J Am Acad Dermatol 2003; 48: 694-701.

2. Liu W, Dowling JP, Murray WK, et al. Rate of growth in melanomas: characteristics and associations of rapidly growing melanomas. Arch Dermatol 2006; 142: 1551-1558.

3. Pizzichetta MA, Talamini R, Stanganelli I, et al. Amelanotic/hypomelanotic melanoma: clinical and dermoscopic features. Br J Dermatol 2004; 150: 1117-1124.

Further reading

1. Menzies SW, Crotty KA, Ingvar C, McCarthy WH. An Atlas of Skin Surface Microscopy of Pigmented Skin Lesions: Dermoscopy. 2nd ed. Sydney: McGraw-Hill; 2002.

DECLARATION OF INTEREST: None.