Sultan Qaboos University Med J, August 2012, Vol. 12, Iss. 3, pp. 360-363, Epub. 15th Jul 12
Submitted 11th Dec 11
Revision Req. 10th Mar 12, Revision recd. 14th Mar 12
Accepted 18th Apr 12

CASE REPORT

Nodular Melanoma Mimicking Keratoacanthoma

Lessons to learn

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وَرَمٌ ميلانينيٌّ عُقْدِيّ يحاكي ورم شائكي متقرن

دروس للتعلم

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الملخص: قدم رجل عمره 67 عاما من أصل صيني مع آفة عقدية غير مؤلمة على ذراعه اليمنى خلال الأشهر الثلاثة السابقة. لوحظ وجود عقدة واحدة صلبة واضحة المعالم على شكل قبة وفي وسطها فتحة من الكيراتين محاطة باحمرار. اشتبه بورم شائكي متقرن مع إنتان جرثومي ثانوي، وخضع المريض لاستئصال الخزعة. تم تأكيد تشخيص سرطان الجلد الخبيث العقدي بواسطة دراسة خزعة العقدة وإجراء الصبغ المناعي النسيجي الكيمياوي . تجدر الإشارة إلى أن سرطان الجلد العقدي الخبيث قد يظهر بتشكيلة واسعة من المظاهر السريرية، وبأن عدم وجود صبغة الميلانين في وَرَمٌ ميلانينيٌّ عُقْدِيّ قد يعوق تشخيص هذه الأورام الخبيثة.

مفتاح الكلمات: الميلانوما، سرطان الجلد الخبيث، ورم شائكي متقرن، تقرير الحالة، ماليزيا

ABSTRACT: A 67-year-old man of Chinese descent presented with a painless nodular lesion that had been present on his right forearm for the previous 3 months. A single, well-defined, dome-shaped, firm nodule with a central keratin plug surrounded by erythema was noted. Keratoacanthoma with secondary bacterial infection was suspected and the patient underwent an excision biopsy. Biopsy of the nodule and immunohistochemical staining supported a diagnosis of nodular malignant melanoma. It should be noted both that nodular malignant melanoma may present with a wide variety of clinical appearances, and that the lack of melanin pigment in nodular malignant melanoma may hinder the diagnosis of this aggressive tumour.

Keywords: Melanoma; Malignant melanoma; Keratoacanthoma; Case report; Malaysia.

Cutaneous malignancies are commonly classified as melanoma skin cancer (MSC) and non-melanoma skin cancer (NMSC). Among MSCs, superficial spreading melanoma is the most common type, followed by nodular melanoma, lentigo maligna melanoma, and acral lentiginous melanoma. Nodular melanoma accounts for 10 to 15% of all melanomas. It is a rapid growing, aggressive tumour observed mainly on sun-exposed areas, classically pigmented with a blue or black colour. However, some have been observed it to be hypo- or amelanotic.[1] It is postulated that during rapid growth the nodules lack pigmentation resulting in hypopigmented lesions.[2] This poses a diagnostic challenge as it may be confused with NMSC. Squamous cell carcinoma (SCC), basal cell carcinoma (BCC), pilomatricoma, and fibroepethelial polyps have been commonly mistaken for keratoacanthoma. We report a rare case of a nodular malignant melanoma mimicking a keratoacanthoma.

Case Report

A 67-year-old man of Chinese descent presented with a painless nodular lesion on the extensor surface of the right forearm. The lesion had grown from a pinpoint size to a lesion of 7 mm x 3 mm x 5 mm over the preceding 3 months. There was no history of trauma, discharge, pruritus, or bleeding from the lesion. Examination revealed a single dome-shaped, pinkish nodule with a central keratin plug surrounded by erythema [Figure 1]. An initial diagnosis of keratoacanthoma secondary

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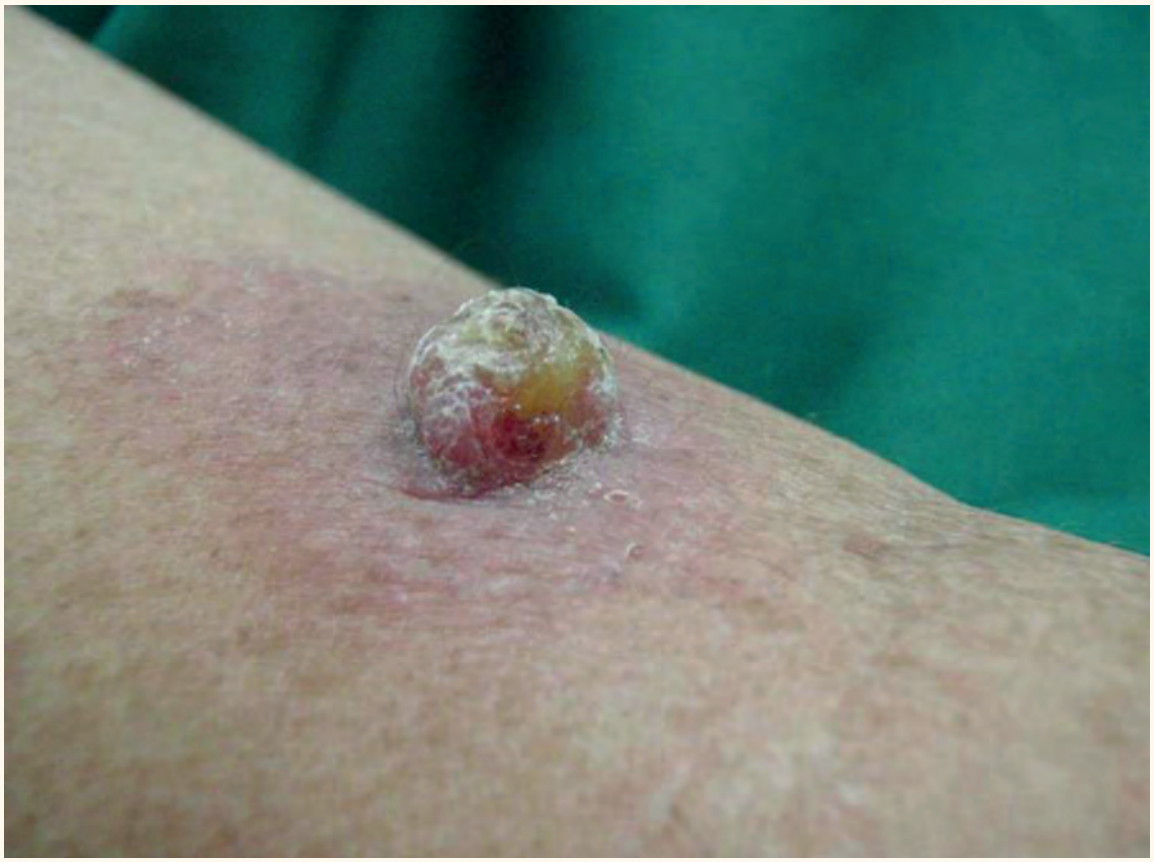

Figure 1: Nodular lesion with central keratin plug on the right forearm. Erythema surrounding the lesion is also shown.

to bacterial infection was made. The patient was prescribed a course of antibiotics prior to an excision biopsy. However, a week later, during the biopsy, the surrounding erythema was noted to be persistent. Macroscopic examination of the biopsy specimen consisted of a piece of skin with a raised nodular lesion. The skin measured 20 x 10 x 5 mm and the nodule measured 10 x 10 x 10 mm. Histopathology of the lesion showed a polypoid intradermal tumour with ulceration of the overlying epidermis composed of nests of epithelioid tumour cells which extended down to the mid-dermis [Figures 2a and b]. The tumour cells had round to oval nuclei, prominent nucleoli, and abundant eosinophilic cytoplasm with some clearing and a distinct cell border. Some cells were large with pleomorphic nuclei and conspicuous nucleoli. Both typical and atypical mitotic figures were observed. Dense lymphoplasmacytic infiltrates were seen in the deep dermis; however, no lymphovascular invasion was noted. Immunohistochemical (IHC) staining for tumour cells showed a strong and diffuse positivity for S-100 [Figure 2c] and a few cells were positive for melan-A [Figure 2d]. The melan-A test, repeated along with HMB45, revealed similar findings. The final diagnosis, based on the histopathology testing and the IHC stains was malignant melanoma, nodular type. The patient was subjected to a second excision biopsy to achieve a clear margin. Histopathological examination of the margin representing the erythematous ring surrounding the lesion showed the presence of lymphocytes and plasma cells, suggesting an inflammatory reaction. A positron emission tomography (PET) scan was negative for any metastasis.

Discussion

Malignant melanoma presents with a wide range of clinical morphology. Classically, it presents as a brown or black pigmented lesion. There are four types of melanomas: superficial spreading, nodular, lentigo maligna melanoma, and acral lentiginous melanoma. Rarely, atypical presentations mimicking soft tissue malignancies have been reported.[3] Nodular melanoma usually presents as papules, nodules, plaques and occasionally as pedunculated lesions.[1] It may present without the

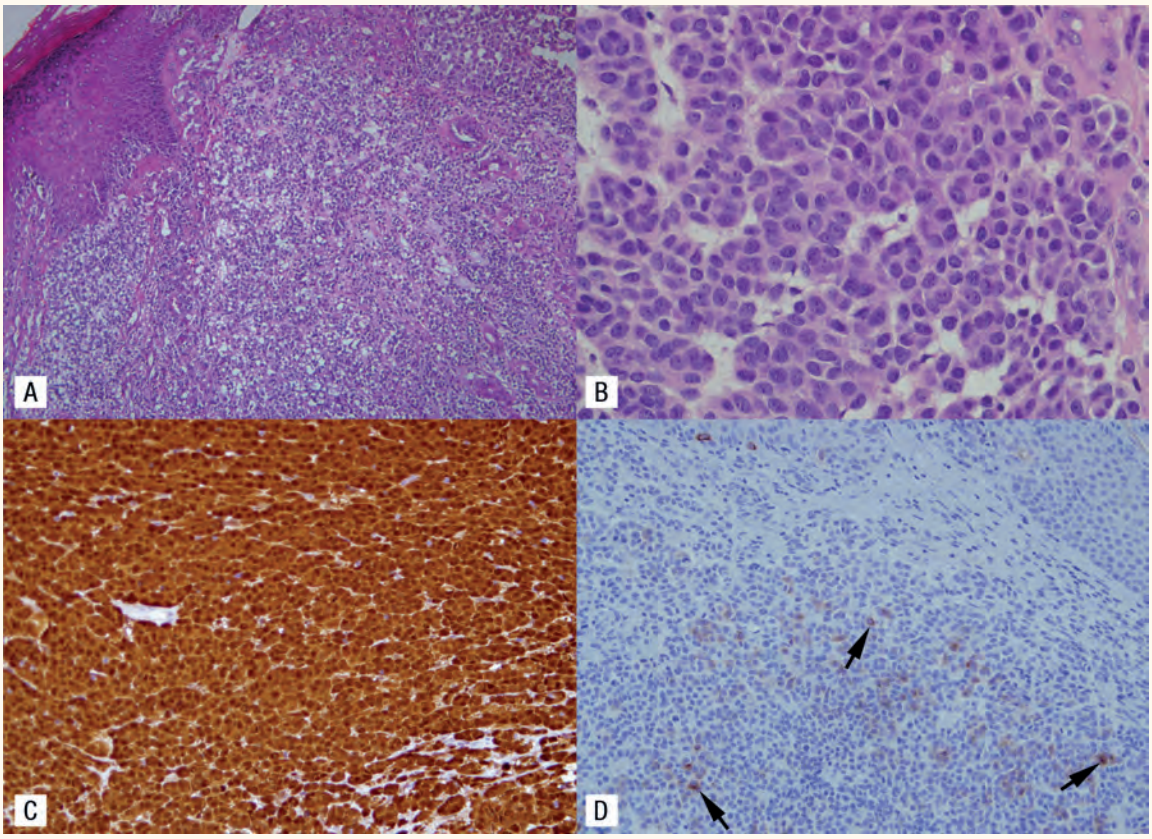

Figure 2: (**A**) Intradermal neoplasm composed of large tumour cells with conspicuous nucleoli and eosinophilic cytoplasm is shown (haematoxylin & eosin [H&E] stain, x 100); (**B**) The lesion at higher magnification (H&E stain, x 400); (**C**) Immunohistochemical stains of the tumour cells show diffuse, strong nuclear and cytoplasmic staining of S-100 (x 200); (**D**) Cytoplasmic staining of melan-A (x 200) (arrows).

classical pigment and mimic the clinical appearance of other benign or malignant skin conditions; hence, they are likely to be misdiagnosed.[4] The lack of the pigment and the variable 'mind-boggling' presentations of melanoma often delay the diagnosis of this fairly aggressive malignant skin condition, resulting in increased morbidity such as amputation, distant metastasis, and even death.[5] Abnormal melanogenesis and loss of the functional capacity of tumour cells due to rapid proliferation have been postulated to cause the lack of pigment.[6]

Keratoacanthomas are rapidly growing, dome-shaped nodules with a central grey-yellow coloured keratotic plug which often undergo spontaneous resolution over 2 to 6 months, leaving a residual scar.[7] Other lesions commonly mistaken for keratoacanthoma include SCC, BCC, pilomatricoma, and fibroepethelial polyps.[8]

The presence of inflammation and tenderness surrounding SCC and malignant melanoma have been described in an earlier article.[9] Histopathological features of the infiltrate surrounding invasive melanoma have been described as an inflammatory reaction which in contrast is rarely encountered in benign pigmented lesions.[10] The lack of melanin pigment with typical features of keratoacanthoma misled the diagnosis of a nodular melanoma in the present case.

Conclusion

Nodular melanoma may present with a multitude of clinical presentations. Some may be atypical and totally unexpected. Physicians should be aware of these various presentations, especially when attending to patients with skin lesions over sun-exposed areas. They should maintain a high index of suspicion for this condition, especially in managing hypo- or non-pigmented nodular lesions. Nodular lesions with surrounding erythema should be treated with more caution as this may provide a clue to an underlying malignancy.

ACKNOWLEDGEMENT

The authors would like thank Prof. Dr. Thomas Krausz of the University of Chicago Medical Center for his contribution in the confirmation of the histological findings of this case.

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