Acral Lentiginous Melanoma in Filipinos: Report of Two Cases

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Abstract

Introduction: Acral Lentiginous Melanoma is a clinicopathologic subtype of malignant melanoma. It is the most common expression among the four variants in Asian population. Its prognosis is generally poorer than the other subtypes. Hence, early diagnosis and surgical excision is the key in management.

Case Summaries:
A 65-year-old male presented with a 10-year history of patch on the second digit of the right hand. There was history of trauma to the finger where subungual hematoma developed. Five years after the injury, a black macule was noted on the previously bruised area. The lesion increased in size involving the periungual area with destruction of the nail plate. Biopsy showed acanthosis and basal layer hyperpigmentation. Intra-epidermal and dermal vacuolated melanocytes were seen. The patient was referred to an oncologist and orthopedic surgeon for management. An 88-year-old male had a 2-year history of black patch on the interdigital area between the 4th and 5th digits of the left foot. No history of trauma was reported prior to the appearance of the lesion. Biopsy showed lentiginous proliferation of atypical melanocytes in the epidermis. Referral to an oncologist and orthopedic surgeon for treatment was made.

Conclusion:
Clinical management of ALM begins with an accurate diagnosis. Therefore it is important to remain vigilant and where there is clinical suspicion, patients should be referred for a dermatological opinion. A typical patient profile, which includes age of onset, location of the lesion, prior trauma, and its relatively high incidence in the Asian population must be borne in mind.

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INTRODUCTION

Cutaneous malignant melanoma is the most common cause of mortality from skin cancers in Caucasian populations. The incidence rate continues to rise in the UK and Australia. Currently there are around 8,500 new cases annually in the UK. In 2003, there were 9,534 new cases of melanoma reported in Australia.[1] In contrast, a significantly lower incidence rate has been reported in Asian populations with rates of 0.65-1/100,000.[2]

There are four distinct categories of melanoma based on histological features. These are superficial spreading (SSM), nodular (NM), lentigo maligna (LMM), and acral lentiginous (ALM).[1-4] The incidence rates of SSM, NM, LMM and ALM In the United States are approximately 70%, 15%, 13% and 2-3% respectively. However, ALM is the most common expression in Asian and Black populations, the rate of ALM is 41% in Japan, 65% in Korea and 62% in the American Blacks.[2]

The prognosis of ALM is generally poorer than the other subtypes. Patients likely overlook the lesion, especially on soles and nail beds. Moreover, ALM may mimic benign morphologies. Hence early diagnosis and surgical excision is the key in management. We report herein two cases of ALM seen in our institution.

Case 1

A 65-year-old male presented with a 10-year history of a black patch on the second digit of the right hand. There was history of trauma to the finger where subungual hematoma developed. The hematoma spontaneously resolved. Five years after the injury, a solitary black macule was noted on the previously bruised area. The lesion increased in size involving the periungual area with destruction of the nail plate. (Figure 1A) Biopsy showed acanthosis and and basal layer hyperpigmentation due to increased melanocytic activity. There was elongation and broadening of the rete pegs. Intra-epidermal and dermal singly scattered vacuolated melanocytes that form intraepithelial theques were seen. There was also pigmented parakeratosis accompanied by moderate numbers of lymphocytic infiltrates. (Figure 1B) Diagnosis of acral lentiginous melanoma was made. The patient was then referred to an oncologist and orthopedic surgeon for management.

Case 2

An 88-year-old male had a 2-year history of black patch on the interdigital area between the 4th and 5th digits and medial aspect of the 5th digit of the left foot. (Figure 2A) No history of trauma was reported prior to the appearance of the lesion. Skin biopsy confirmed the diagnosis of acral lentiginous melanoma. Marked acanthosis, elongation of rete ridges and lentiginous proliferation of atypical melanocytes in the epidermis were present. (Figures 2B-D) Referral to an oncologist and orthopedic surgeon for treatment was made.

DISCUSSION

Acral Lentiginous Melanoma accounts for 2-3% of all melanomas.[5] Overall incidence of melanoma is less in dark skinned individuals. However, ALM makes up a much higher proportion in Asian and Black populations.[2-3] Furthermore, ALM has a very poor prognosis. In Reed's study, patients with ALM had a mean 3-year survival rate of 11%.6 The poor survival rate of these patients may have been due in part to delay in diagnosis. Metzger et al also found that ALM had a high probability of being clinically misdiagnosed as benign melanocytic lesion, which defers the initiation of treatment.[7]

The mean age at diagnosis for ALM was 62.8 years. Our patients were diagnosed at age 65 and 88 years. Bradford et al conducted a study, which stated that the lower extremity was most commonly involved than the upper extremity.[6] Similarly, Kai and Fujiwara reported that ALM occurs more frequently on lower extremities. The soles of the feet are the most frequent sites of ALM, where 56% of ALM on lower extremities occurred. In contrast, most frequent sites on upper extremities are fingernails, where 45% of ALM on upper extremities appeared[2], which is the case in our first patient.

Green et al did a case control study of 275 melanomas diagnosed on the soles and palms to look into the risk factors. Interestingly, they found that sun exposure was an important risk factor in the development of ALM despite their plantar and nail bed location.

Both patients however, did not have significant sun exposure. Trauma has also been proposed as a possible risk factor for the development of ALM.8 Likewise, our first patient had a history of trauma prior to the appearance of the lesion.

Clinically, ALMs begin with pale brown macules, enlarge slowly and form irregularly pigmented, asymmetric macular lesions. Nodules may appear on the pigmented lesion and form ulceration. Both of our patients presented with a hyperpigmented patch, which enlarged slowly. Bristow and Acland stated that the most common symptom among the 21 patients in their study was a change in size of lesion. This is followed by bleeding, change in color, and change in lesion form. A case series by Soon et al reported that atypical presentations of acral melanoma include wart, callus, keratoacanthoma, non-healing ulcer, non-healing traumatic wound, subungual hematoma, and onychomycosis.[9] Other studies confirm that acral melanoma may assume benign morphologies consistent with benign nevus, ulcers, bacterial and mycotic infections, chronic paronychia, pyogenic granuloma, plantar wart, ganglion cyst, blister, ischemic toe, and traumatic lesion.[10-12] Hence, misdiagnosis and delay in diagnosis are particularly likely in ALM. Both of our patients deferred their consult for years which maybe due to the assumption of a benign lesion.

Histopathology of ALM shows acanthosis, spindled melanocytes, and lentiginous elongation of rete ridges. Cytologic atypia and lymphocytic infiltration are present. Marked hyperpigmentation is seen because of the melanophages in the upper dermis and aggregates of melanin in the stratum corneum. ALM usually appears thick due to its glabrous skin location.[13]

Clinical management of ALM begins with an accurate diagnosis. Therefore it is important to remain watchful. If there is clinical suspicion, patients should be referred for a prompt dermatological opinion. A typical patient profile, which includes age of onset, form and location of the lesion, prior trauma, and its relatively high incidence in the Asian and Black populations must be borne in mind. Patient awareness should be strengthened as well.

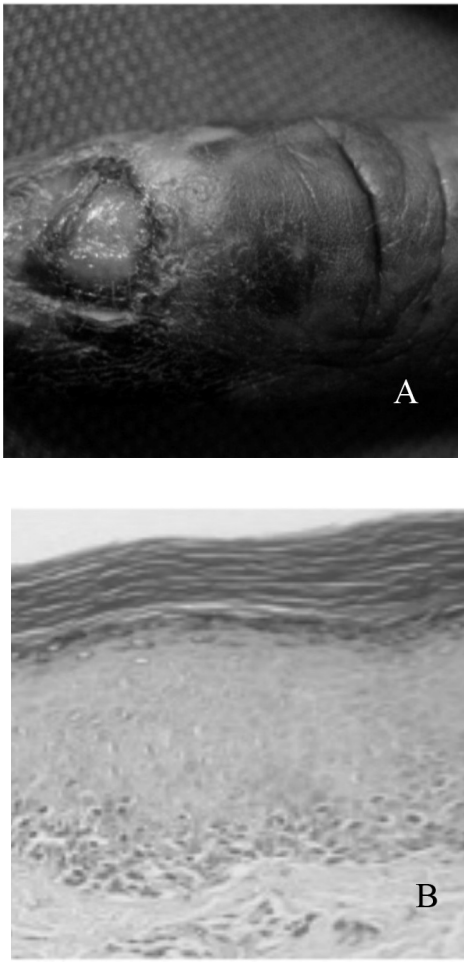

Figure 1. A. Solitary well-defined black patch with nail involvement on the right index finger of an 88-year-old male

B. Singly scattered melanocytes in the epidermis (10x, Hematoxylin & Eosin stain)

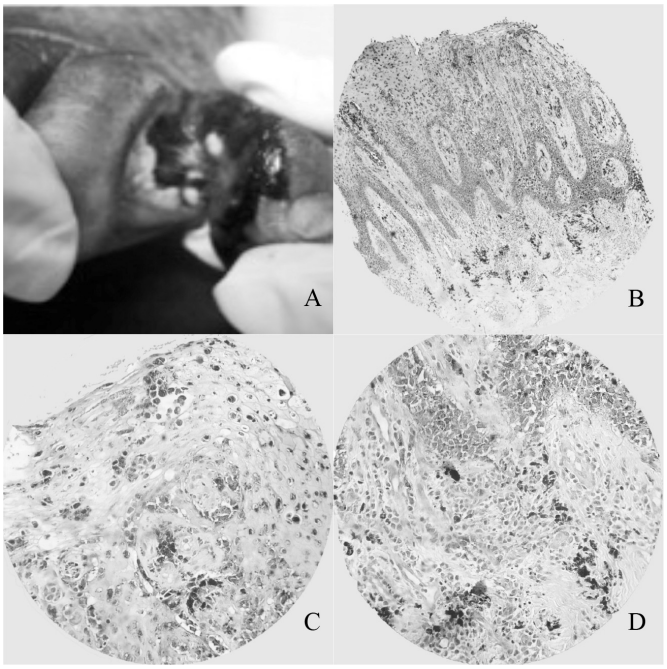

Figure 2. A. Solitary well-defined black patch with areas of depigmentation on the medial aspect of the 5th digit and interdigital area between the 4th and 5th digits of the left foot of an 88-year-old male

B. Elongation of rete ridges, lentiginous proliferation, and melanophages (10x, S100 stain)

C. Upward migration of melanocytes (40x, S100 stain)

D. Melanocytic nests at the tip of rete ridges, pigment incontinence and plasma cells (40x, S100 stain)

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