JPDS Journal of the Philippine Dermatological Society

CASE REPORT

Dermoscopic features and management strategy of a 10-year history acral lentiginous melanoma in a 55-year-old Filipino

Alexis G. De las Alas, MD,[1] Aira Monica R. Abella, MD,[1] Kristy Elleza R. Evangelista, MD, FPDS,[2] Gisella U. Adasa, MD, FPDS[2]

ABSTRACT

INTRODUCTION Acral lentiginous melanoma (ALM) is the most common type of cutaneous melanoma in Asians that is not associated with ultraviolet radiation (UV) exposure. Dermoscopy enables clinicians to distinguish between benign and malignant acral melanocytic lesions, with some dermoscopic characteristics playing a role in staging and have prognostic implications, which allows for appropriate surgical intervention. The difficulty of making an early diagnosis of ALM is highlighted by this case. ALM's destructive nature, alongside the patient's lack of awareness and vigilance, and healthcare access inequality, influences its prognosis.

CASE REPORT This is a case of a long-standing acral lentiginous melanoma with no palpable lymphadenopathies in which it was not immediately detected through biopsy. Upon detection, wide excision with 2 cm margins and disarticulation of the 5th digit of the right foot reconstructed with a fasciocutaneous advancement flap with split thickness skin graft, grafted from the right anterior thigh was done.

CONCLUSION Patient education and early detection is crucial in disease-specific survival. ALM often confers a poorer prognosis due to more advanced disease at the time of diagnosis.

KEYWORDS Acral lentiginous melanoma, dermoscopy, parallel ridge pattern, BRAAFF checklist

INTRODUCTION

Acral lentiginous melanoma (ALM) is the most common type of cutaneous melanoma in Asians.[1] Only 52 cases were recorded in the Philippine Dermatological Society (PDS) Health Information System (HIS) from 2011-2016 due to its rarity. This may be due to the inconspicuous location of the lesion, alongside traumatic changes that can delay the diagnosis. Furthermore, ALM may be managed by other surgical specialties, which would not log cases in the PDS-HIS. [2] It accounts for 2-3% of all new melanomas and a sharp increase is seen in incidence per person year after the age of 80.[1] If left untreated, life-threatening complications such as metastasis resulting in end organ damage can occur.

Misdiagnosis is common in ALM due to its various clinical differentials. In these cases, dermoscopy can improve diagnostic accuracy by distinguishing between benign and malignant acral melanocytic lesions. Identifying dermoscopic features combined with increased awareness about the occurrence of ALM is essential in establishing an early diagnosis leading to increased survival rates and cure.

CASE SUMMARY

The patient is a 55-year-old Filipino male who initially presented with a 10-year history of a solitary, discrete, black macule on the upper plantar surface of the right foot. The patient previously worked as a farmer for 37 years with a notable history of trauma as the patient reportedly works barefooted. No consult was done, and no medications were taken nor applied. Over time, the lesion gradually increased in size, approximately measuring 2 x 3 cm, extending to the anterior lateral side of the upper plantar surface of the right foot, with areas of crusting, erosions, and excoriations, prompting the patient to seek private dermatology consult. On the first consult, the patient underwent an incisional biopsy revealing post inflammatory hyperpigmen-

[1]Department of Dermatology, Research Institute for Tropical Medicine 9002 Research Drive, Filinvest Corporate City, Alabang, Muntinlupa 1781, Philippines

Corresponding author
Alexis G. De las Alas, MD,
alexdelasalasmd@gmail.com

Conflict of interest
None

Source of funding
None

Figure 1. Cutaneous examination. Presence of a solitary, well-defined, irregularly shaped, tender, blue-gray to black plaque with multiple areas of telangiectasias, erosions, excoriations, and ulcerations, measuring 7 x 5 cm, on the anterolateral aspect of the plantar surface of the right foot.

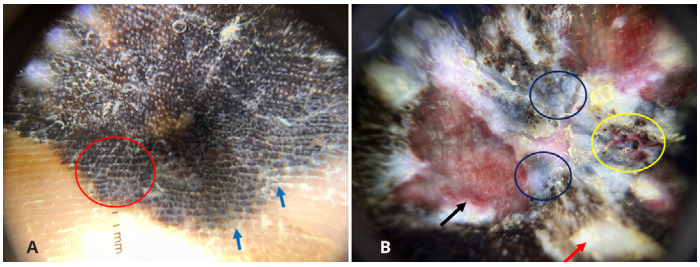

Figure 2. Dermoscopic findings. A. Presence of a parallel ridge pattern (enclosed in a red circle) and irregular borders (pointed by the blue arrows). B. Presence of a multicomponent pattern consisting of blue-white veil (enclosed in blue circles), hemorrhagic crusts (enclosed in yellow circle), areas of ulceration (pointed by the black arrow) and a white structureless area (pointed by the red arrow).

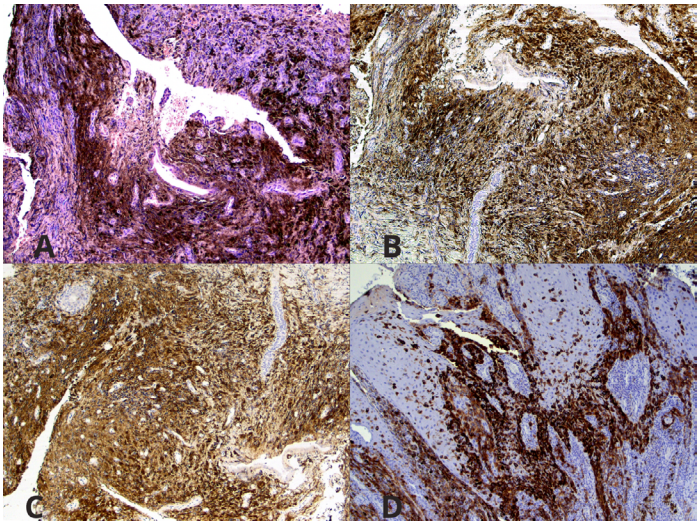

Figure 3. Histopathologic findings. A. On low power view at 10x magnification, presence of heavily pigmented cells that formed confluent nests, varying in size and shape throughout the dermis. B. On S100 staining, a strong and diffuse nuclear expression of melanocytes in the dermis was present. C. On HMB 45 staining, the same level of staining of melanocytes in the superficial and deep dermis was present, signifying faulty maturation. D. On Melan A staining, cytoplasmic staining of melanocytes extending until the deep dermis was present.

tation. Immunohistochemical staining with S100 was suggested but was not done. The patient was prescribed with topical antibiotic resulting in no improvement of the lesion. On the second consult 1 year ago, further increase in size of the lesion with persistence of crusts, erosions and excoriations were noted, hence another incisional biopsy was done. Results revealed ALM and the patient was then referred to our institution for further evaluations and management.

Cutaneous examination revealed a solitary, well-defined, irregularly-shaped, tender, blue gray to black plaque with multiple areas of telangiectasias, erosions, excoriations, and ulcerations, measuring 7 x 5 cm, on the anterolateral aspect of the plantar surface of the right foot. (Figure 1). No palpable lymphadenopathies on the inguinal, popliteal, external iliac and obturator region were noted.

Dermoscopy revealed multicomponent pattern consisting of a parallel ridge pattern, presence of irregular borders (Figure 2A), blue-white veil, hemorrhagic crusts, areas of ulceration and a white structureless area (Figure 2B).

The tissue block was stained with S100, HMB 45 and Melan A for further evaluation (Figure 3) revealing the presence of heavily pigmented cells that formed nests in the superficial and deep dermis.

After an interdisciplinary discussion, the patient underwent a wide excision with 2 cm margins and disarticulation of the 5th digit of the right foot (Figure 4A) and reconstruction was done with a fasciocutaneous advancement flap with a split thickness skin graft, grafted from the right anterior thigh (Figure 4B). The specimen was sent for a rush frozen section which showed a Breslow thickness of at least 7-8 mm. Both peripheral and deep margins of resected tissue specimen were negative for malignant melanocytic cells (Figure 4C). Laboratory work ups such as sentinel lymph node biopsy and chest/abdomen CT were ordered but were not done due to financial constraints.

Following the American Joint Committee on Cancer (AJCC 8th Edition), the final pathologic diagnosis was Stage IIB - T4N0M0 signifying a mitotic rate of 2 per square mm with no lymphovascular invasion, indicating that the tumor depth invaded the reticular dermis.

DISCUSSION

ALM in skin of color typically presents as a macule progressing to a patch with variable light to dark brown pigment. It often has angular edges, following the ridges of the dermatoglyphics. As the lesion progresses and invades, it may become nodular and darkly pigmented, appearing

blue to black, with some presenting with ulceration.[1]

Given the unique features of acral sites, melanocytic lesions on the soles may present with many diagnostic challenges.[3] Through naked eye alone, it is difficult to distinguish acral melanoma from benign lesions, hence, dermoscopy can be useful in formulating differential diagnoses on acral surfaces, thereby improving diagnostic accuracy in ALM.

For ALM, the parallel ridge pattern, seen as a parallel linear pigmentation along the ridges of dermatoglyphics, is the hallmark dermoscopic pattern. The sensitivity and specificity of a parallel ridge pattern for diagnosing early ALM has been shown to be 86% and 99%, respectively.[3] In a multicenter study in Japan by Saida et al, the presence of this pattern has shown to have high sensitivity and diagnostic accuracy in melanoma.[4] Other dermoscopic patterns in ALM include: an irregular diffuse pigmentation, multicomponent pattern, blue-white veil, and ulceration.[4,5]

The emergence of validated dermoscopic algorithms can also be used as a guide in the management of pigmented acral lesions. Lallas et al. developed the BRAAFF checklist, a scoring system of six variables: blotches, ridge pattern, asymmetry of structures, asymmetry of colors, parallel furrow pattern, and fibrillar pattern.[6] Our patient had dermoscopic findings of an irregular blotch, parallel ridge pattern, asymmetry of structures and colors, earning a BRAAFF score of 6. Lesions that score 1 or higher warrant evaluation for ALM.[6]

Another algorithm was created by Koga and Saida, incorporating the identification of the parallel ridge pattern or a lesion >7 mm in diameter without a typical benign pattern.[7] Our patient presents with a parallel ridge pattern on dermoscopy and a lesion >7mm, thus performing a biopsy is warranted in this case. Additional stains were requested to further confirm the histopathologic diagnosis and establish an appropriate work up and management for this patient.

Post-operatively, the patient was instructed to do daily wound care and intake of prescribed medications. The patient was advised to have an annual whole body skin examination,[8] observation for the presence of satellite lesions on the post operative site, and follow-up visits with his medical oncology, plastic & general surgery, and dermatology specialists.

Some dermoscopic features play a role in the AJCC staging system and have prognostic implications in melanoma. The presence of “shiny-white streaks", "milky-red areas" and a "blue-whitish veil" in dermoscopy was found to be highly associated with an ulceration in histology and a mitotic rate of more than 1/mm^2. Also, the presence of ulceration further leads to classification into B of stage I, II and III tumors. In correlation with prognostic estimation, the presence of these dermoscopic features was found to be highly associated with distant metastases.[9]

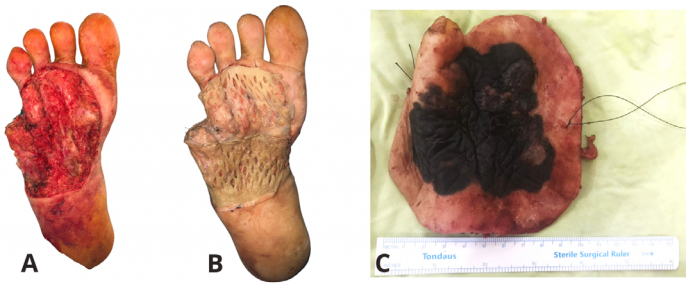

Figure 4. Surgical Procedure. A. Wide excision with 2 cm margins and disarticulation of the 5th digit of the right foot. B. Fasciocutaneous advancement flap with split thickness skin graft, grafted from the right anterior thigh. C. Frozen section findings of Breslow thickness of at least 7-8 mm. Both peripheral and deep margins of resected tissue specimen were negative for malignant melanocytic cells.

The prognosis of ALM in Asians are affected by several factors, such as the duration of the lesion before diagnosis, Breslow thickness > 4.0 mm, high mitotic index, presence of vascular invasion, regional lymph node metastasis at diagnosis and its pathologic stage, along with its dermoscopic features.[9,10] For this case, given the following factors, the patient has a prognosis of 53.3% and 27.4% for 5- and 10-year disease-specific survival rates, respectively.[10]

CONCLUSION

The incidence of ALM is increasing worldwide. Here is a rare case of an ALM patient with a 10-year history. The patient presented with a chronic course of ALM, a condition where immediate management is crucial.

In addition, our paper focuses on the importance of dermoscopy as diagnostic tool for ALM. The use of dermoscopy aids in the diagnosis of ALM, especially in early stages. Since the survival and prognosis of ALM depends on the early diagnosis, the need for patient education and increased doctor’s awareness of the clinical and dermoscopic features of ALM is vital for the cost-effective treatment and prevention of this deadly cancer.

ACKNOWLEDGMENTS

We would like to thank Dr. Anne Kristine Villalon of the Department of Surgery in Salve Regina General Hospital, for managing the patient and Dr. Johaness Dayrit of the Department of Dermatology in Research Institute for Tropical Medicine for interpreting the immunohistochemical stain results.

REFERENCES

1. Brunsgaard E, Wu YP, Grossman D. Melanoma in Skin of Color: Part I. Epidemiology and clinical presentation. J Am Acad Dermatol [Internet]. 2022; Available from: http://dx.doi.org/10.1016/j.jaad.2022.04.056
2. Milana-Martinez JKT, Zabala DAR, Lim KAT, Lacuesta-Gutierrez MPM, Visitacion LR. Acral lentiginous melanoma treated by wide excision with split-thickness skin graft: case in images [Internet]. SPMC J Health Care Serv. 2017. Available from: http://n2t.net/ark:/76951/jhcs8wut85
3. Tan A, Stein JA. Dermoscopic patterns of acral melanocytic lesions in skin of color. Cutis. 2019;103(5):274–6.
4. Saida T, Miyazaki A, Oguchi S, Ishihara Y, Yamazaki Y, Murase S, et al. Significance of dermoscopic patterns in detecting malignant melanoma on acral volar skin: results of a multicenter study in Japan: Results of a multicenter study in japan. Arch Dermatol [Internet]. 2004;140(10):1233–8. Available from: http://dx.doi.org/10.1001/archderm.140.10.1233
5. Kim SY, Yun SJ. Cutaneous melanoma in Asians. Chonnam Med J [Internet]. 2016;52(3):185–93. Available from: http://dx.doi.org/10.4068/cmj.2016.52.3.185
6. Lallas A, Kyrgidis A, Koga H, Moscarella E, Tschandl P, Apalla Z, et al. The BRAAFF checklist: a new dermoscopic algorithm for diagnosing acral melanoma. Br J Dermatol [Internet]. 2015;173(4):1041–9. Available from: http://dx.doi.org/10.1111/bjd.14045
7. Koga H, Saida T. Revised 3-step dermoscopic algorithm for the management of acral melanocytic lesions. Arch Dermatol [Internet]. 2011;147(6):741–3. Available from: http://dx.doi.org/10.1001/archdermatol.2011.136
8. Johnson MM, Leachman SA, Aspinwall LG, Cranmer LD, Curiel-Lewandrowski C, Sondak VK, et al. Skin cancer screening: recommendations for data-driven screening guidelines and a review of the US Preventive Services Task Force controversy. Melanoma Manag [Internet]. 2017;4(1):13–37. Available from: http://dx.doi.org/10.2217/mmt-2016-0022
9. Deinlein T, Arzberger E, Zalaudek I, Massone C, Garcias-Ladaria J, Oliveira A, et al. Dermoscopic characteristics of melanoma according to the criteria “ulceration” and “mitotic rate” of the AJCC 2009 staging system for melanoma. PLoS One [Internet]. 2017;12(4):e0174871. Available from: http://dx.doi.org/10.1371/journal.pone.0174871
10. Lv J, Dai B, Kong Y, Shen X, Kong J. Acral melanoma in Chinese: A clinicopathological and prognostic study of 142 cases. Sci Rep [Internet]. 2016;6:31432. Available from: http://dx.doi.org/10.1038/srep31432