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Title Page

Considerations for Management of Longitudinal Melanonychia During the COVID-19 Pandemic: An International Perspective

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Running Head: Management of Longitudinal Melanonychia and COVID-19

To the editor:

Longitudinal melanonychia (LM) is the presenting sign of nail unit melanoma (NUM) in 2/3 of cases and is therefore among the most important conditions managed by dermatologists. In normal times, referral for LM would prompt an expedited appointment for clinical examination and dermoscopy.[1] However, due to SARS-CoV-2, dermatologists have been asked to reconsider "urgent/emergency" conditions. The COVID-19 pandemic has propelled physicians to unexpectedly adopt telemedicine without adequate guidance for managing LM patients.

General nail telemedicine guidelines are listed in Table 1, which may be used to narrow the differential diagnosis of a patient presenting with LM (Table 2). We recommend tele-examination in an area with excellent lighting, and examining each nail unit individually, with palmar and plantar surfaces. A thorough clinical examination is performed on the relevant nail unit(s), with measurement of band width, digit involved, band color, band borders, nail splitting, bleeding, ulceration and presence of pigment on the nail folds or hyponychium. Patient photos sent prior to the telemedicine appointment are often superior to "live" video images. Patients may to be coached to photograph their nails in focus, using a

solid backdrop to frame the nail and direct camera focus.

In cases suspicious for NUM, or when telemedicine and supplementary photography preclude a benign diagnosis, an in-office visit is recommended, after screening the patient for COVID-19 symptoms and exposure. Necessary precautions are taken, including virtual check in/check out, the patient coming alone and wearing a mask, social distancing and staff wearing appropriate personal protective equipment. Since contact dermoscopy is preferred for evaluation of LM,[2] disposable caps are used and then discarded. Alternatively, indirect dermoscopy will minimize direct patient contact.

If a biopsy is warranted to rule out NUM, an N95 mask and face shield is suggested for the dermatologist and medial assistant, since there is close prolonged contact with the patient during preparation, anesthesia, biopsy, dressing application, and patient education. While a cooling device and/or vibration may be used to mitigate pain during digital anesthesia, talkesthesia, a disposable stress ball and ethyl chloride spray are preferred to avoid cross contamination. Firm pressure, aluminium chloride, and other hemostatic techniques are favored over cautery to prevent viral spread.[3] Disposable sutures (rapidly absorbable polyglactin 910) are used to circumvent post-operative visits, with written instructions given, and follow-ups facilitated by telemedicine.

NUM requires prompt treatment, despite recent guidelines from the National Comprehensive Cancer Network recommending delayed excision for in situ and T1 melanomas for up to 3 months (https://www.nccn.org/covid-19/pdf/Melanoma.pdf). NUMs are often diagnosed in later stages than cutaneous melanomas, with 5- and 10-year survival rates 30% and 13%, respectively, for NUM. An en bloc (wide local) excision is performed in the office setting for NUM *in situ* and recommended over digit amputation to preserve functionality without increased mortality.[4,5]

Telemedicine can be optimized for diagnosis and treatment for many cases of LM while COVID-19 is prevalent. LM concerning for NUM necessitates prompt diagnosis with biopsy and histopathology; NUM requires timely excision to decrease morbidity and mortality.

Abbreviations:

LM – longitudinal melanonychia

NUM – nail unit melanoma

References

1. Ko D, Oromendia C, Scher R, Lipner SR. Retrospective single-center study evaluating clinical and dermoscopic features of longitudinal melanonychia, ABCDEF criteria, and risk of malignancy. J Am Acad Dermatol. 2019 May;80(5):1272-1283.

2. Starace M, Alessandrini A, Brandi N, Piraccini BM. Use of Nail Dermoscopy in the Management of Melanonychia: Review. Dermatol Pract Concept. 2019 Jan 31;9(1):38-43.

3. Lipner SR. Novel Use of Brimonidine 0.33% Gel for Hemostasis in Nail Surgery. Dermatol Surg. 2019 Jul;45(7):993-996.

4. Flores-Terry M, Romero-Aguilera G, Mendoza C, Franco M, Cortina P, Garcia-Arpa M, Gonzalez-Ruiz L, Garrido JA. Functional Surgery for Malignant Subungual Tumors: A Case Series and Literature Review. Actas Dermosifiliogr. 2018 Oct;109(8):712-721.

5. Mannava KA, Mannava S, Koman LA, Robinson-Bostom L, Jellinek N. Longitudinal melanonychia: detection and management of nail melanoma. Hand Surg. 2013;18(1):133-9.

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98 Table 1: General nail telemedicine guidelines

Perform the examination in an area with excellent lighting, preferably natural light.
This examination should include all 20 nails, with particular attention paid to presence of number of nails involved. Each nail unit is ezamined individually, with palmar and plantar surfaces.
A thorough clinical examination is performed on the relevant nail unit(s). If the telemedicine platform is equipped with a ruler: the width of the band and entire nail plate are measured. Alternatively, the patient is guided to use a ruler and the dermatologist measures the band and nail plate width in real time.
In addition to band width, digit involved (one, several, all, and type of digit), band color, band borders, nail splitting, bleeding, ulceration and presence of pigment on the nail folds or hyponychium is noted.

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100 Table 2: Etiologies of longitudinal melanonychia, clinical features, telemedicine pearls, and

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Diagnosis	Clinical Features	Telemedicine Pearls/Treatment
Exogenous pigment	Brown-black dark linear longitudinal bands on the nail plate, with irregular medial border. The	Ask patient to clean with 70% alcohol or acetone. For exogenous pigment, the pigment will wipe

	pigment may not be linear. Examples: dirt, tar, newspaper print, tobacco, cloth and hair dyes, henna	off.
Subungual hematoma	Purple to brown-black amorphous areas; elliptical bandlike areas. Leukonychia may overlie the pigmented area. The pigment is often not linear. Onycholysis is often present.	Ask patient to take serial photos monthly. Explain average nail growth rates: 2-3mm/month for fingernails and 1 mm/month for toenails. The pigment will grow out with nail plate growth.
Bacterial Pigment (Pseudomonas aeruginosa colonization/infection)	Linear brown-black or greenish pigmentation seen though the nail plate.	Recommend keeping nails short and dry. Trim back all onycholytic nail. Consider trial of gentamicin 0.03% solution or hypochlorite sodium nightly for three months.
Fungal melanonychia	The pigmented band is narrower proximally and	Look for involvement of more than one nail, scale

	wider distally, with pointed extensions proximally. Note that these intricacies may be difficult to appreciate with telemedicine.	on the subungual area and on the plantar feet and web spaces. Recommend topical antifungal to treat tinea pedis. Patient will need an in-person visit when feasible for mycologic confirmation before treatment of onychomycosis.
Melanocytic activation	Homogenous grey-brown band(s) that is typically present on more than one nail (1^{st}, 2^{nd}, 3^{rd} fingernails most common involvement of the bilateral 4^{th} and 5^{th} toenails is also common).	Assess phototype, obtain medication list, and medical history. Involvement of more than one nail makes a benign etiology most likely. Ask patient to take serial photos monthly. Atypia of band, widening or darkening of one band, pain, splitting, bleeding, or ulceration necessitates an in-person visit and probable biopsy to rule

		out nail unit melanoma.
Nail unit nevus	Brown-black longitudinal band involving one nail unit, typically first presenting in a child.	Nail unit melanomas are exceedingly rare in white children. If stable, the patient should be seen in-office when reasonable for clinical examination and dermoscopy. Rapid growth, darkening, pain, or onychodystrophy necessitates a prompt in-office visit.
Nail unit melanoma	Brown-black longitudinal band involving a single digit. Thumb and hallux most common. Width > 3mm and/or >40% of total nail plate width, splitting, bleeding, ulceration are concerning for NUM.	Any of these clinical features necessitates an in-person examination with clinical examination, dermoscopy, and photography with probable biopsy.