



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Considerations for management of longitudinal melanonychia during the coronavirus disease 2019 (COVID-19) pandemic: An international perspective



To the Editor: Longitudinal melanonychia is the presenting sign of nail unit melanoma in two-thirds of cases and is therefore among the most important conditions managed by dermatologists. In normal times, referral for longitudinal melanonychia would prompt an expedited appointment for clinical examination and dermoscopy.¹ However, because of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), dermatologists have been asked to reconsider “urgent/emergency” conditions. The coronavirus disease 2019 pandemic has propelled physicians to unexpectedly adopt telemedicine without adequate guidance for managing patients with longitudinal melanonychia.

General nail telemedicine guidelines are listed in [Table I](#), which may be used to narrow the differential diagnosis of a patient presenting with longitudinal melanonychia ([Table II](#)). 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 photographs sent before the telemedicine appointment are often superior to “live” video images. Patients may be coached to photograph their nails in focus, using a solid backdrop to frame the nail and direct camera focus.

In cases with suspected nail unit melanoma, or when telemedicine and supplementary photography preclude a benign diagnosis, an in-office visit is recommended after screening of the patient for coronavirus disease 2019 symptoms and exposure. Necessary precautions should be taken, including virtual check-in/checkout, the patient’s coming alone and wearing a mask, social distancing, and staff’s wearing appropriate personal protective equipment. Because contact dermoscopy is preferred for evaluation of longitudinal melanonychia,² disposable caps are used and then discarded.

Table I. 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 number of nails involved. Each nail unit is examined 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 (1, several, all, and type of digit), band color, band borders, nail splitting, bleeding, ulceration, and presence of pigment on the nail folds or hyponychium are noted.

Alternatively, indirect dermoscopy will minimize direct patient contact.

If a biopsy is warranted to rule out nail unit melanoma, an N95 mask and face shield are suggested for the dermatologist and medical assistant because there is close prolonged contact with the patient during preparation, anesthesia, biopsy, dressing application, and patient education. Although a cooling device, vibration, or both 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 postoperative visits, with written instructions given, and follow-ups facilitated by telemedicine.

Nail unit melanoma requires prompt treatment, despite recent guidelines from the National Comprehensive Cancer Network that recommend delayed excision for in situ and T1 melanomas for up to 3 months (<https://www.nccn.org/covid-19/pdf/Melanoma.pdf>). Nail unit melanomas are often diagnosed in later stages than cutaneous melanomas, with 5- and 10-year survival rates 30% and 13%, respectively, for the former. An en bloc (wide local) excision is performed in the office setting for nail unit melanoma 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 longitudinal

Table II. Etiologies of longitudinal melanonychia, clinical features, telemedicine pearls, and treatments

Diagnosis	Clinical features	Telemedicine pearls/treatment
Exogenous pigment	Brown-black, dark, linear, longitudinal bands on the nail plate, with irregular medial border. The pigment may not be linear. Examples: dirt, tar, newspaper print, tobacco, cloth and hair dyes, henna.	Ask patient to clean with 70% alcohol or acetone. Exogenous pigment will wipe off.
Subungual hematoma	Purple to brown-black amorphous areas; elliptic bandlike areas. Leukonychia may overlie the pigmented area. The pigment is often not linear. Onycholysis is often present.	Ask patient to take serial photographs monthly. Explain average nail growth rates: 2–3 mm/mo for fingernails and 1 mm/mo for toenails. The pigment will grow out with nail plate growth.
Bacterial pigment (<i>Pseudomonas aeruginosa</i> colonization/infection)	Linear brown-black or greenish pigmentation observed through 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 3 mo.
Fungal melanonychia	The pigmented band is narrower proximally and wider distally, with pointed extensions proximally. These intricacies may be difficult to appreciate with telemedicine.	Look for involvement of more than 1 nail, as well as scale 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 gray-brown band(s) that is typically present on more than 1 nail (first, second, and third fingernails most common; involvement of the bilateral fourth and fifth toenails is also common).	Assess phototype, obtain medication list and medical history. Involvement of more than 1 nail makes a benign etiology most likely. Ask patient to take serial photos monthly. Atypia of band, widening or darkening of 1 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 1 nail unit, typically first presenting in a child	Nail unit melanomas are exceedingly rare in white children. If stable, the patient should be treated 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 >3 mm or >40% of total nail plate width, splitting, bleeding, and ulceration are concerning for nail unit melanoma.	Any of these clinical features necessitates an in-person examination with clinical examination, dermoscopy, and photography with probable biopsy.

melanonychia while coronavirus disease 2019 is prevalent. Longitudinal melanonychia concerning for nail unit melanoma necessitates prompt diagnosis with biopsy and histopathology; it requires timely excision to decrease morbidity and mortality.

Shari R. Lipner, MD, PhD,^a Matilde Iorizzo, MD, PhD,^b Nathaniel Jellinek, MD,^{c,d,e} Bianca Maria Piraccini, MD, PhD,^f and Richard K. Scher, MD^a

From Weill Cornell Medicine, Department of Dermatology, New York, New York^a; private dermatology practice, Bellinzona, Switzerland^b; Dermatology Professionals, Inc, East Greenwich, Rhode Island^c; Department of Dermatology, Warren Alpert Medical School at Brown University, Providence, Rhode Island^d; Department of Dermatology, University of Massachusetts Medical School, Worcester, Massachusetts^e; and Department of Experimental, Diagnostic and Specialty Medicine (DIMES) Alma Mater Studiorum University of Bologna, Italy.^f

Funding sources: None.

Conflicts of interest: None disclosed.

Reprints not available from the authors.

Correspondence to: Shari R. Lipner MD, PhD, 1305 York Ave, New York, NY 10021

E-mail: sbl9032@med.cornell.edu

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;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;9(1):38-43.
3. Lipner SR. Novel use of brimonidine 0.33% gel for hemostasis in nail surgery. *Dermatol Surg*. 2019;45(7):993-996.
4. Flores-Terry M, Romero-Aguilera G, Mendoza C, et al. Functional surgery for malignant subungual tumors: a case series and literature review. *Actas Dermosifiliogr*. 2018;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):133-139.

<https://doi.org/10.1016/j.jaad.2020.05.028>