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LETTER

DERMATOLOGIC THERAPY WILEY

Retrospective study of nail telemedicine visits during the COVID-19 pandemic

Dear Editor

The COVID-19 pandemic has resulted in rapid adoption of telemedicine, with recent teledermatology interest and recommendations.[1] Nail telemedicine has not been explored and guidelines are lacking. Our study objectives were to analyze characteristics of nail teledermatology visits and provide recommendations for virtual nail visits.

Following Weill Cornell Institutional Review Board approval (Protocol #20-03021691-01), all virtual nail visits (16 March 2020 to 5 May 2020) seen by a nail specialist (SRL) were queried from EPIC. Analyses were performed using *t*-tests for continuous variables and chi-squared tests for categorical variables, with significance set at $P < .05$.

There were 107 total visits, representing 96 patients during the study period. Demographics and clinical characteristics of nail televisits are shown in Table 1. The average age was 46.1 years, with 68% females. Longitudinal melanonychia was the most frequent new complaint (8/46 patients, 17%), with in-person follow-up recommended for 7/8 patients. Onychomycosis was the favored diagnosis for 7/46 (15%) new visits, with 6/7 requiring an in-person visit for mycological confirmation. Onychomycosis (18/50, 36%) and nail psoriasis (9/50, 18%) were the most common diagnoses for virtual follow-up visits. In-person follow-ups were recommended for 57% of new nail conditions. New vs follow-up virtual visits were 14 times more likely to necessitate in-person visits ($P < .01$). Nail patients were recommended to come for office visits for clinical examination/dermoscopy (39%), nail clippings (32%), biopsies (18%), and other procedures (11%). For all visits, systemic medications were five times more likely to be re-ordered/continued vs started ($P < .01$).

More than half of new virtual visits could not be managed by telemedicine and required subsequent in-person visits (Table 2). This subgroup of patients fell into distinct diagnostic categories. For example, patients with suspected onychomycosis necessitated confirmatory testing. Telemedicine was appropriate for onychomycosis follow-ups, including examination for clinical improvement, medication counseling, monitoring adverse events, interval laboratory monitoring in high-risk populations, and education on preventing recurrence.[2] In the vast majority of cases, longitudinal melanonychia, both new and follow-up, particularly involving a single digit, required an in-person visit for monitoring, including high quality photography, precise measurements, and dermoscopy.[3] Subungual hematomas and body-focused repetitive behaviors, including onychophagia and onychotillomania, typically had consistent clinical features and could be managed by telemedicine.[4]

To triage nail patients for in-person vs virtual visits most efficiently, effectively, and economically, prescreening using photographs by attending or resident dermatologists should be considered. We acknowledge that this approach requires additional physician time commitment, which may not be feasible in all practice settings. Artificial intelligence should be developed for this purpose to decrease health care costs and improve patient care.[5]

Limitations include single-center, retrospective design, data from one dermatologist, and sample size. Since only one patient had an in-person follow-up during the study period, outcomes could not be analyzed.

In sum, telemedicine can be utilized to manage patients with previously diagnosed nail diseases and diagnose some new nail conditions. Patients with longitudinal melanonychia and suspected onychomycosis should be scheduled exclusively for in-person visits. Further research in nail telemedicine is needed to analyze patient outcomes to establish more rigorous guidelines.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

TABLE 1 Demographics and clinical characteristics of virtual nail visits

	New complaint (N = 46)	Follow-up (N = 50)
Age	44.4 (12-82)	48.6 (9-77)
Female (%)	70	58
Single (%)	34	42
Insurance (%)		
Private Insurance	85	78
Medicare	13	20
Self-pay	2	2
Ethnicity (%)		
White	46	36
Black	4	4
Asian	4	2
Other	9	4
Declined	37	54
Hispanic/Latino	2	2
Not Hispanic/Latino	46	38
Unknown	4	2
Declined	48	58
Distance to clinic (Miles)	10.3	12.8
Involvement (%)		
Fingers	48	36
Toes	39	46
Both	13	18
Referrals (%)		
Dermatology	29	
Internal medicine	15	
Other	4	
No referral	52	
Avg. time from last in-office visit (days)		77
In-person follow-up (%)	54	4
Reasons for in person follow-up (%)		
Clinical examination/dermoscopy	42	0
Nail sampling (clipping for histopathology, scraping for KOH, culture, PCR)	35	0
Nail biopsy	19	0
Treatment (intralesional nail matrix injections, incision and drainage, biologics)	4	100
Medications		
Average no. of new medications started	0.39	0.22
Topical (%)	94	92
Systemic (%)	6	8
Average no. of medications continued/reordered		0.62
Topical (%)		51
Systemic (%)		49
Average no. of medications stopped		0.06

TABLE 2 Number of patients with recommendations for in-person visits after new and follow-up virtual visits

Diagnosis	New complaint no.[a]	In-person follow-up recommended no. (%)	Follow-up no.[a]	In-person follow-up recommended no. (%)
Beau's line	2	0	2	0
Brittle nails	3	0	0	0
Pseudomonas nail infection	4	0	2	0
Half and half nails	1	0	0	0
Lichen planus	1	1 (100)	1	0
Longitudinal melanonychia	8	7 (88)[c]	2	0
Myxoid cyst	2	2 (100)	0	0
Nail psoriasis	3	1 (33)	9	2 (22)
Unspecified	6	6 (100)	1	0
Onychocryptosis	2	0	1	0
Onychomatricoma	1	1(100)	0	0
Onychomycosis	7	6 (86)[b]	18	0
Onychopapilloma	1	1 (100)	2	0
Onychophagia/Onychotillomia/ Habit Tic	4	0	4	0
Chronic paronychia	3	0	4	0
Retronychia	3	2 (67)	7	0
Subungual exostosis	1	1 (100)	0	0
Subungual hematoma	5	0	0	0
Trauma	5	0	1	0

[a]Number of diagnoses exceeds total number of patients because some patients had more than one diagnosis.
[b]Six of seven new patient complaints with diagnoses of onychomycosis required an in-person follow-up visit for mycological confirmation. The patient that did not require in-person follow up had prior mycological confirmation.
[c]Seven of eight new patient complaints of longitudinal melanonychia required an in-person follow-up visit. The patient that did not require in-person follow up had gray-brown bands involving multiple nails.

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