Managing Simple Chronic Paronychia and Onycholysis With Ciclopirox 0.77% and an Irritant-Avoidance Regimen

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Dermatologists and other physicians frequently encounter simple chronic paronychia and onycholysis. In addition to strict avoidance of contact irritants, a broad-spectrum topical antifungal agent has been recommended. We conducted an examination of treatment with this type of agent and an assessment of the efficacy of ciclopirox 0.77% topical suspension in combination with a strict irritant-avoidance regimen. Early results of a pilot study (N=44) using ciclopirox 0.77% topical suspension in patients diagnosed with simple chronic paronychia and/or onycholysis show excellent therapeutic outcomes of a combined regimen of a broad-spectrum topical antifungal agent such as ciclopirox and contact-irritant avoidance in this patient population.

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Simple chronic paronychia and onycholysis are common dermatologic nail disorders that require a comprehensive and multifaceted management approach to arrive at optimal clinical outcomes and reduce the risk of chronicity.[1,2] Use of a broad-spectrum antifungal agent to eliminate possible exacerbating pathogenic fungi has been associated with good treatment outcomes.[3] In addition, the use of this type of approach has addressed the issues of chronic nail trauma and contact-irritant avoidance.

The clinical impetus for the present study is based on data obtained from 2 retrospective studies by the authors. Over a 13-year period (1982–1995), 137 patients with a clinical diagnosis of simple chronic paronychia and/or onycholysis and a history of exposure to contact irritants and/or nail trauma were seen at the private office of the senior author.[3] In addition to examining potential etiologic factors for these conditions based on a review of medical records, clinical data from these previous studies were reevaluated to delineate a treatment protocol that could assist clinicians with the management of this disorder and facilitate attainment of optimal therapeutic results.

The previous studies included 44 patients with chronic paronychia with fingernail involvement. Of the 93 patients who were included in the study for onycholysis, 91 had fingernail involvement, and 2 had toenail involvement. Women accounted for 91% (40/44) of the patients with chronic paronychia and 92% (86/93) of the patients with onycholysis. There was a strong contact-irritant history in both groups, with 93% (41/44) of the patients with paronychia and 96% (89/93) of the patients with onycholysis reporting a contact-irritant history. Yeast was cultured in approximately 85% of patients in both previous studies.

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Table 1.

Results of 20% Potassium Hydroxide Preparation

	Simple Chronic Paronychia, n (%) (n=17)	Onycholysis, n (%) (n=31)
Not done or inadequate	3 (17.65)	3 (9.68)
Done	14 (82.35)	28 (90.32)
Negative	8 (57.14)	24 (85.71)
Positive	3 (21.43)	1 (3.57)

The results of the retrospective studies suggest that addressing fungal infection and avoiding contact irritants were both important in treating chronic paronychia and onycholysis.[3]

Materials and Methods

Exclusion criteria included patients who exhibited 2-feet 1-hand syndrome, because topical antifungal agents are not an effective treatment for this disorder; an apparent dermatophyte infection (eg, tinea manuum if either fingernail paronychia or onycholysis was evident, tinea pedis if toenail paronychia or onycholysis was evident, subungual hyperkeratosis, and white superficial onychomycosis); and/or a history or physical finding suggestive of psoriasis, lichen planus, pityriasis rubra pilaris, or hand eczema. Patients also were excluded from the study if they used drugs or ingestants, had a systemic disease with a significant potential contributory relationship to paronychia or onycholysis, or had a congenital nail disorder.

A detailed history of medication and systemic disease was taken from each patient. Laboratory evaluations included obtaining nail material from the affected area from which 2 tests were performed: a 20% potassium hydroxide (KOH) with dimethylsulfoxide preparation and a fungal culture using Sabouraud agar with cycloheximide and chloramphenicol and/or Sabouraud agar with chloramphenicol only. The material obtained from the patients with paronychia for the KOH examination was obtained from the underside of the proximal nail fold and corresponding nail plate; for the patients with onycholysis, the material came from the nail bed and the underside of the nail plate.

In addition to a strict irritant-avoidance regimen, ciclopirox 0.77% topical suspension (TS) was administered to the affected area twice daily for 6 to 12 weeks. Treatment was stopped in less than 12 weeks if the condition cleared. Immediately prior to beginning therapy in the patients with onycholysis, the nails were cut back to the point of attachment.

Results

A total of 44 patients (N=44) aged 17 to 85 years presented at a dermatology clinic in Jackson, Mississippi, with a primary complaint of either simple chronic paronychia of 6 weeks or more duration (n=17) or onycholysis (n=31)(4 patients had both). All 44 patients completed the study. Patient demographics and characteristics included a predominance of women enrolled in the study (92.5%); the fingernails as the location of nail disorder (100.0%); and a strong contact-irritant history (84.5%). Tables 1 and 2 list KOH preparation and fungal culture results. The results of several KOH preparations and fungal cultures were not done or were inadequate. Table 3 lists a summary of patient characteristics. Four of the 17 patients with simple chronic paronychia also had onycholysis, but on different nails. These 4 patients were counted in both groups.

The combination of ciclopirox 0.77% TS and irritant avoidance cleared the condition in 100% of the patients with paronychia. The combination therapy improved the condition in 87% (27/31) of the patients with onycholysis, of which 81.5% (22/27) demonstrated total clearance. Before beginning the study protocol, 7 patients received other medications for the treatment of nail infections (6 patients with paronychia had acute exacerbations of chronic paronychia that were first cleared with oral cephalexin therapy, and 1 patient with onycholysis had an acute bacterial infection

Table 2.

Summary of Culture Results

	Simple Chronic Paronychia (n=17)		Onycholysis (n=31)	
	Sabouraud Agar With Cycloheximide/ Chloramphenicol, n (%)	Sabouraud Agar With Chloramphenicol, n (%)	Sabouraud Agar With Cycloheximide/ Chloramphenicol, n (%)	Sabouraud Agar With Chloramphenicol, n (%)
Not done or inadequate	1 (5.88)	1 (5.88)	3 (9.68)	1 (3.23)
Done	16 (94.12)	16 (94.12)	28 (90.32)	30 (96.77)
Negative*	2 (12.50)	1 (6.25)	10 (35.71)	3 (10.00)
Positive†	14 (87.50)	15 (93.75)	18 (64.29)	27 (90.00)
Yeast	14 (100.00)	15 (100.00)	16 (88.89)	27 (100.00)
Dermatophyte	0 (0)	0 (0)	2 (11.11)	0 (0)

*Neither dermatophyte nor yeast.
†Dermatophyte and/or yeast.

Table 3.

Summary of Patient Characteristics

	Simple Chronic Paronychia	Onycholysis
Total no. of cases	17	31
Gender, n (%)		
Female	15 (88.24)	30 (96.77)
Male	2 (11.76)	1 (3.23)
Mean age, y (range)	54.06 (17–85)	60.52 (23–85)
Location of nail disorder, n (%)		
Fingernails	17 (100.00)	31 (100.00)
Toenails	0 (0)	0 (0)
Nail history, n (%)		
Contact irritants	15 (88.24)	25 (80.65)
Trauma	0 (0)	2 (6.45)

that was treated with ciprofloxacin and topical gentamicin sulfate).

Comment

Simple chronic paronychia is characterized by inflammation of one or more nail folds (usually the proximal nail fold) and may begin as an isolated event with chronicity developing with repeated trauma or contact-irritant exposure.[4] Onycholysis is characterized by the distal separation of the nail plate from the underlying and/or lateral supporting structures. The exact pathogenesis is unclear. In both chronic paronychia and onycholysis, women are most commonly affected.[3]

The combination of ciclopirox 0.77% TS and irritant avoidance produced excellent therapeutic outcomes. The individual contributions of ciclopirox and the irritant-avoidance regimen were not studied. A multimodal management approach consisting of an accurate diagnosis, pharmacotherapy, preventive measures (eg, elimination of predisposing factors, proper nail care), and use of a broad-spectrum topical antifungal agent manifested good results.

There was a high incidence of secondary yeast infection (49%–85%)[3]; dermatophyte-related infections rarely were cultured. We believe that reliance on KOH preparations alone for these diagnoses may not be accurate.

Care must be taken when selecting the most appropriate topical antifungal agent because their respective spectrum of activities may differ significantly. The benefits of administering broad-spectrum topical antifungal therapy were many: it met various disease management needs and addressed pathogenic involvement (dermatophytes, yeasts, and bacteria); it provided potential anti-inflammatory action; it prevented relapse/reinfection; and it was cost-effectiveness and convenient (Table 4).[5,6]

Table 4.

Ciclopirox 0.77% (Gel, Topical Suspension, or Cream)[5,6]

Fungicidal
Dermatophytes
Yeasts
Sporicidal
Demonstrated activity against nonproliferative phases
Antibacterial
In vitro activity against a wide range of organisms at low minimum inhibitory concentrations
Gram positive
Gram negative (including *Pseudomonas aeruginosa*)
Anti-inflammatory
Inherent property without risks of side effects associated with corticosteroid therapy

There is controversy about the role of yeasts in chronic paronychia.[5-8] Tosti et al[9] completed a study that did not find yeasts to be an important part of the pathogenesis of chronic paronychia. Tosti and colleagues[9] also utilized an antifungal agent with an irritant-avoidance regimen. The patients in the study responded well to topical steroids, supporting the role of contact irritants in chronic paronychia. Daniel et al[1-3,8,10,11] and Tosti et al[9] both have written about the role of contactants in chronic paronychia. The Tosti study had controls; the Daniel studies did not. A study by Rosen et al[12] in 1997 clearly indicated an anti-inflammatory effect of ciclopirox, which also may have played a role in the improvement of patients in studies by Daniel et al.[1-3,7,8,10,11] These studies prove the presence of yeasts but do not prove that the yeasts are pathogenic.

Conclusion

Simple chronic paronychia and onycholysis are common nail disorders. In addition to addressing issues of chronic nail trauma and contact-irritant avoidance, elimination of possible exacerbating pathogenic organisms with a broad-spectrum topical antifungal agent has been associated with a high incidence of disorder resolution; however, the contribution of the antifungal agent is uncertain.

Broad-spectrum topical antifungal therapy with ciclopirox 0.77% TS has documented activity against yeasts commonly found in simple chronic paronychia and onycholysis. Furthermore, the anti-inflammatory properties of ciclopirox theoretically may play a therapeutic role.[12]

The excellent results demonstrated in this pilot study support the potential use of ciclopirox 0.77% TS as an adjunct therapy for the treatment of

simple chronic paronychia and onycholysis along with a strict irritant-avoidance regimen.

If onycholysis is allowed to persist for long periods, the nail bed may cornify (ie, develop a granular layer) and may develop dermatoglyphics like those on the tip of the digit. Once this happens, it is unlikely that the nail plate will reattach.[2,3,11] Thus, early and appropriate treatment is important for optimal therapeutic outcomes.

Furthermore, we believe that a strict contactant-avoidance regimen should be used in all inflammatory nail disorders. These contactants theoretically may act as irritants or allergens or induce a Köbner phenomenon.

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