Topical steroids for the treatment of retronychia.

DR. ANDRE LENCASTRE (Orcid ID : 0000-0001-7378-7068)

DR. NÉLIA CUNHA (Orcid ID : 0000-0002-6287-1798)

Article type : Letter to Editor

Title: Topical steroids for the treatment of retronychia

Short Title: Topical steroids for retronychia

André Lencastre, MD[a]; Matilde Iorizzo, MD, PhD[b]; Marie Caucanas, MD[c]; Nélia Cunha, MD[a]; Myrto Georgia Trakatelli, MD [d]; Inès Zaraa, MD, PhD[e] Michèle Henry, MD[f]; Ralph Daniel, MD [g]; Stamatis Gregoriou, MD, PhD[h]; Eckart Haneke, MD, PhD[i]; Christos Prevezas, MD;[j] Pankaj Salphale, MD[k]; Bianca Maria Piraccini, MD, PhD[l]; Michela Starace, MD[l]; Antonella Tosti, MD[m]; Bertrand Richert, MD, PhD[n]

[a] Department of Dermatology, Centro Hospitalar Universitário de Lisboa Central, Lisbon, Portugal; [b]Private Dermatology Practice, Bellinzona, Switzerland; [c]Clinique Saint-Exupery, Toulouse, France; [d]Second Department of Dermatology and Venerology, Papageorgiou Hospital, Aristotle university school of Medicine, Thessaloniki, Greece; [e]Dermatology Department, Hôpital Bichât-Claude Bernard, Paris, France; [f]Private Dermatology Practice, Rennes, France; [g]University of Mississipi Medical Center and University of Alabama, Birmingham, AL, USA; [h]First Department of Dermatology and Venereology, University of Athens Medical School, Andreas Sygros Hospital, Athens, Greece; [i]Department of Dermatology, Inselspital, University of Bern, Bern, Switzerland; [j]Nail unit , Andreas Syggros University Hospital, Athens, Greece; [k] Department of Dermatology, RIPAS Hospital, Bandar Seri Begawan , Brunei; [l]Dermatology Department of Specialized, Experimental and Diagnostic Medicine, University of Bologna, Bologna, Italy; [m]Department of Dermatology&Cutaneous Surgery, University of Miami, USA; [n]Hôpitaux universitaires Saint Pierre & Brugmann, Hôpital universitaire des enfants Reine-Fabiola, Université Libre de Bruxelles, Belgium.

Corresponding author:

André Jacinto Garcez de Lencastre, MD

Serviço de Dermatologia, Hospital de Santo António dos Capuchos, Centro Hospitalar Universitário de Lisboa Central

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/jdv.15603

Address: Alameda Santo António dos Capuchos, 1169-50, Lisboa, PORTUGAL

Phone number: +966387487

lencastre.derm@gmail.com

Keywords: Retronychia, Topical steroids, Topical treatment, Paronychia, Ingrowing nail

Submission statement: Authors have read and agreed upon submission of the present work entitled “Topical steroids for the treatment of retronychia” to the Journal of the European Academy of Dermatology and Venereology. Authors state that the work has been found in compliance with our institution’s ethics committee guidelines. The authors have no ethical conflicts to disclose and no funding sources to report.

Editor,

The term retronychia originated in 1999 (1) and a first series of cases was published in 2008. (2) A disturbance in the continuous longitudinal nail growth (3) leads to an upward and backward nail displacement with posterior embedding. Several nail plates pile up beneath the proximal nail fold (PNF) generating paronychia and granulation tissue. Repetitive shoewear-related microtrauma appears to be the main trigger, although others have been described, differing between fingernails and toenails. (2-4). Young women are mostly afflicted. (2, 4, 5-7) Retronychia typically manifests by the clinical triad: nail growth arrest, xanthonychia and paronychia. (8)

Studies claim that nail avulsion is the treatment of choice (2, 7, 9). Some patients refuse surgery and ask only for pain relief. Some case reports mention alternatives such as taping or topical steroids (TS) with some results (2, 7-10). We thus considered evaluating the efficacy of potent TS in retronychia.

This retrospective study was performed using a physician-addressed online questionnaire sent to the European Nail Society mailing list. Patients were included if they had been treated with TS only. Assessed clinical features were as specified on Table 1. Treatment parameters were: 1) use of potent/ultrapotent TS; 2) with/without occlusion; 3) duration; 4) response (absent, partial,

complete). Treament response statistical analysis was performed using Fischer's Exact Test, with IBM® SPSS® Statistics software, version 22.

Among the 175 physicians approached**,** eighteen physicians replied, cumulating 56 cases. From those, 38 (69%) were female, the youngest was 12 and the oldest 73 y. o. (mean 29.6 years). The lowest reported disease duration was 2 months, and the longest 20 years, with a 6-month median. Toenails were affected in 51 patients (91,1%) and 4 had fingernail retronychia (0,07%). In this group, none showed symmetrical contralateral involvement. In the remaining 51 patients, one toenail involvement occurred in 36 (69,2%), 2 toenails in 15 (28,8%) and 3 toenails in 1. Symmetrical contralateral changes were noticed in 14 (87%) of the multiple toenail subgroup of patients. The cause was trauma in 3 fingernail cases , trauma/walk-related in 22 of the toenail cases, and unknown in the remaining.

Thirty-one patients were treated with TS under occlusion. Treatment periods lasted 8 weeks on average (the least was under a week, the longest recorded were 24 weeks). Complete healing was seen in 23 occasions (41,1%), partial results (i.e. improvement of paronychia without resumption of nail growth) in 16 (28,5%) and failure in 17 (30,4%).

Complete response (Figure 1) was more common in grade I cases (p=0.005). A statistical difference concerning the duration of treatment was observed between: patients with partial response vs. no response, where duration of therapy averaged 9.5±1.7 vs. 5.3±0.6 weeks (p=0.022) and patients with complete response vs. no response, where therapy lasted 10.3±1.5 vs. 5.3±0.6 weeks on average, respectively (p=0.012). No statistical difference was noticed when considering presence of granulation tissue, TS use under occlusion and disease duration.

TS may work by reducing the inflammation and edema of the PNF which elevate the proximal nail. Consequently, realignment is obtained, halting further distal rocking and stabilizing growth. We

found TS were completely and partially efficacious on 41.1% and 28.5% of cases, respectively. Response correlated with milder paronychia and longer treatment durations (9.5-10 weeks).

The main limitation of this study is its retrospective, physician questionnaire-based design. TS should be the first line treatment of retronychia, especially in milder forms. Shoewear/gait biomechanics-related issues should always be addressed. If there is no improvement after 10 weeks, nail avulsion should be performed.

Reference

(1) *de Berker DA, R. J. Retronychia-Proximal ingrowing nail. J Eur Am Acad Dermatol Venereol 1999, 12(Supp 2), S126.*

(2) *de Berker DA, et al. Proximal ingrowing of the nail plate. J Am Acad Dermatol 2008,58,(6):978-83*

(3) Braswell MA, Daniel CR 3rd, Brodell RT. Beau lines, onychomadesis, and retronychia: A unifying hypothesis. J Am Acad Dermatol. 2015 Nov;73(5):849-55.

(4) Baumgartner M, Haneke E. Retronychia: diagnosis and treatment. Dermatol Surg. 2010 Oct;36(10):1610-4.

(5) Robledo A, et al. Retronychia: an underdiagnosed disease. Dermatol Online J. 2017 Jul 15;23(7).

(6) Gerard E, et al. Risk factors, clinical variants and therapeutic outcome of retronychia: a retrospective study of 18 patients. Eur J Dermatol. 2016 Aug 1;26(4):377-81

(7) Ventura F, et al. "Retronychia--clinical and pathophysiological aspects". J Eur Acad Dermatol Venereol. 2016 Jan;30(1):16-9

(8) *Richert B, Caucanas M, André J. Retronychia. Ann Dermatol Venereol. 2014;141(12):799-804.*

(9) Piraccini BM, et al. Retronychia in children (…) a case series. J Am Acad Dermatol. 2014 Feb;70(2):388-90

(10) Cabete J, Lencastre A. Recognizing and treating retronychia. Int J Dermatol. 2015 Jan;54(1):e51-2.

Table 1 – Clinical features assessed and number of patients demonstrating such (n = 56)

Clinical feature	Number
Paronychia grade:	
I) none to very little swelling and inflammation of the PNF*;	12
II) moderate swelling and inflammation of the PNF;	31
III) severe swelling and inflammation of the PNF;	14
Presence of granulation tissue;	18
Presence of xanthonychia;	46
Presence of onycholysis (proximal; distal; proximal and distal)	20; 17; 9

*PNF – proximal nail fold