

# IDIOPATHIC ONYCHODYSTROPHY IMPROVES WITH INTRADERMAL DEXPANTHENOL INJECTION: AN EXTRAORDINARY USE

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## Abstract

### Keywords:

Dexpanthenol, onychodystrophy, injection.

Idiopathic onychodystrophy is one of the most challenging conditions for dermatologists to treat. Topical steroids, laser, total nail ablation and nail avulsion had been tried, but no optimal therapy has been decided yet. Herein we present the case of a middle-aged male patient with idiopathic onychodystrophy on his thumb, who improved with six intradermal dexpanthenol injections on weekly basis. This is an extraordinary successful use of dexpanthenol, which is a common medication all over the world.

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## Introduction

Onychodystrophy is the name given for the deterioration of the structure of the nail plate. Although it is frequently caused by fungal infections, onychodystrophy can also be seen in trauma, peripheral vascular diseases and neurological diseases. Idiopathic onychodystrophies are also not rare (1). As well as cosmetic problems, secondary infection and pain may worsen quality of life. Cutting nails in this disease is a difficult task. Treatment options are limited.

Dexpanthenol is a B complex vitamin called pantothenic acid. It is often used topically for promotion of epithelization and moisturizing (2). There is no much clinical study regarding injectional form

of dexpanthenol, except its gastrointestinal stimulation effect reported in the past (3).

In this article, we present a male patient with onychodystrophy on his thumb, who improved with dexpanthenol injection into the nail matrix.

## Case report

A 46-year-old man was admitted to our clinic for malformation of his thumb for about two years (Figure 1). He was diagnosed with fungus at that time and used oral and topical antifungal, and occasionally, topical steroids. Despite this, no improvement was achieved.

Native examination of the nail was performed, which failed to identify any fungi. The patient was diagnosed with idiopathic onychodystrophy with-



**Figure 1.** Onychodystrophic thumb



**Figure 2.** A healthy nail after dexpanthenol injection

out any underlying cause. A 0.4 cc dexpanthenol was intradermally applied with 0.1 cc of pantoicaine, 2-3 mm proximal to both medial and lateral sides of the dystrophic thumb.

A total of six injections at weekly intervals was administered in the patient's thumb nail. No side effects were observed. A tolerable pain was described by the patient. At the end of second month, the nail has completely improved (Figure 2).

## Discussion

Idiopathic onychodystrophy is a nail problem that is very difficult to treat resulting in little patient satisfaction. Successful outcomes have been reported with topical steroids, laser and phenol administration with matrix ablation (1, 4, 5).

There is an interesting case report in which chronic idiopathic onychodystrophy healed without any adverse effects, with the carotene-rich diet consisting of two cups of carrot juice per day for a month (6).

Nail avulsion is an invasive option that is problematic in terms of quality of life during postoperative period, and moreover, it often fails to achieve adequate success.

Dexpanthenol, also known as Provitamin B5, is an epithelial emollient molecule that can be administered intramuscularly, intravenously and subcutaneously in parenteral form, with very few side effects (7).

Our patient had a history of antifungal and topical steroid treatment failure. Thus, it was thought that dexpanthenol, which has wound repair promoting properties, could have a therapeutic effect and the intralesional application was preferred for effective tissue concentration. We thought that a molecule with safe intravenous and intramuscular applications would be safe for intradermal injections as well. As a matter of fact, we did not encounter any side effect other than injection pain.

With this highly safe molecule, such a success is perfectly appreciated in a common but difficult-to-treat problem.

Hereby, we hope that our modest success in this case will lead to further trials which would establish possible role of dexpanthenol in nail dystrophias.

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## Bibliography

1. Tilmann Oppel, Hans Christian Korting. onychodystrophy and its management. *Ger Med Sci* 2003;1:Doc02.
2. Proksch E, de Bony R, Trapp S, Boudon S. Topical use of dexpanthenol: a 70<sup>th</sup> anniversary article. *J Dermatolog Treat* 2017;8:766-773.
3. Hanck AB, Goffin H. Dexpanthenol (Ro 01-4709) in the treatment of constipation. *Acta Vitaminol Enzymol* 1982;1-2:87-97.
4. Vélez NF, Jellinek NJ. Response to onychodystrophy treated using fractional carbon dioxide laser therapy and topical steroids. *Dermatol Surg* 2014;7:801-802.
5. Becerro de Bengoa Vallejo R, Losa Iglesias ME, Alou Cervera L, Sevillano Fernández D, Prieto Prieto J. Total nail ablation for onychodystrophy with optimized gauze-phenol application. *J Eur Acad Dermatol Venereol* 2010;8:936-942.
6. Jung JY, Roh MR, Chung KY. Treatment of Chronic Idiopathic Onychodystrophy with Intake of Carotene-rich Food. *Ann Dermatol* 2008;1:6-10.
7. Stozkowska W, Piekos R. Investigation of some topical formulations containing dexpanthenol. *Acta Pol Pharm* 2004;6:433-437.