



EMJOI MICROPEDI

**Clinical Study
October 2011**

Treatment of Hyperatotic Feet With The Micro-Pedi Hard Skin Remover – An Intermediate Report

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Introduction

Plantar keratoderma (hyperkeratotic skin) constitutes a heterogeneous group of disorders characterized by thickening of the soles of individuals who are affected.

Most common form is the focal keratoderma, which consists of localized areas of hyperkeratosis located mainly on pressure points and sites of recurrent friction.

Other forms may include post menopausal form (keratoderma climactericum), multiple callosities (small, hyperkeratotic papules) and keratodermas secondary to various diseases like fungi infection (dermatophytosis), dermatitis , psoriasis and more.

The most common treatment for plantar keratoderma are the mechanical scarpers.

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Aim of the study

The purpose of this work was to evaluate the effectiveness of an innovative electronic file (Micro-Pedi, Emjoi ,Soft Lines International Ltd. Hong Kong) for the improvement of mild to moderate plantar keratoderma.

Methods

Eight participants with, mild to moderate involvement of feet were enrolled to this study. Participants who have undergone any other treatment (including topical creams) one month prior to the study, were excluded. All participants completed two follow up visits two weeks and one month after the initialization of the study.

Treatments were performed on a daily base by the participants with Micro-Pedi device.

Participants were photographed before and during each visit using a Nikon D5000 camera (Nikon Inc. Japan). Photographs were standardized in magnification, lighting, and positioning. Photographs were shown to two blinded observers (board-certified dermatologists) as well as to the individual participants. Each observer scored the photographs for clinical improvement manifested as improvement keratoderma . Each visit was evaluated using a quartile grading scale: 0 (no improvement), 1 = 1–25% (minor improvement), 2 = 26–50% (moderate improvement), 3 = 51–75% (marked improvement), 4 = 76–100% (very significant improvement). A similar scale was used for participant satisfaction: 0 (unsatisfied), 1 (slightly satisfied), 2 (somewhat satisfied), 3 (satisfied), 4 (very satisfied).

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Statistical Analysis

The Wilcoxon matched pairs test was used for 2 paired comparisons and Friedman's test for more than 2 paired comparisons. P values less than 0.05 were considered significant.

Results

Eight participants (6 males and 2 females) aged 35 to 75 years (mean 55.2 ± 2.0) were enrolled.

After the first visit (two weeks), the mean level of improvement was 3.4 ± 0.2 . After the second visit (four weeks) the mean level of improvement was about the same 3.5 ± 0.2 . Participant evaluation at was similar. At the one months follow-up, 7 of the 8 participants had an improvement score of 4 (75% to 100% improvement), and one exhibited a score of 2 (26-50%). On investigation it was found that this patient has used the device manually due to the battery failure.

No any side effects or discomfort were reported. No any type of erosion or skin injury.

Conclusion

The Micro-Pedi, device was found to be extremely effective in the improvement of mild to moderate plantar keratoderma.

The lack of side effects and the simplicity of operation makes this treatment safe as an home use device.

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The novel approach represents a new option in the armamentarium of this common phenomenon.

References

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TABLE 1. Blinded Evaluator Assessment of Improvement

	<i>Mean score ± standard deviation</i>	
	<i>Two weeks after treatment</i>	<i>1 month after treatment</i>
Hyperkeratosis	3.4 ± 0.2	3.5 ± 0.2

0 = no improvement
 1 = 1–25% improvement
 2 = 26–50% improvement
 3 = 51–75% improvement
 4 = 76–100% improvement

TABLE 2. Participant Assessment of Improvement: One-Month Follow-Up

	<i>Mean score ± standard deviation</i>
	<i>One months after last treatment</i>
Hyperkeratosis	3.2 ± 0.5
Overall satisfaction	3.2 ± 0.4

0 = no improvement / unsatisfied
 1 = 1–25% improvement / slightly satisfied
 2 = 26–50% improvement / somewhat satisfied
 3 = 51–75% improvement / satisfied
 4 = 76–100% improvement / very satisfied