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CASE REPORT PEER REVIEWED | OPEN ACCESS

# Coexisting median canaliform nail dystrophy and habit-tic deformity

Ahmed Ibrahim Ali, Ahmed Bakr Elazab, Islam Mohamed Eldisoky

## ABSTRACT

**Introduction:** Median canaliform nail dystrophy (MCD) and habit-tic deformity (HTD) are nail abnormalities that share overlapping clinical and pathogenetic features, and may represent a spectrum of trauma-induced nail disorders. However, their coexistence in the same patient is rarely reported.

**Case Report:** We describe a 42-year-old man presenting with concurrent MCD and HTD affecting the thumbnails.

**Conclusion:** This case highlights the diagnostic challenges in differentiating between these conditions and supports the hypothesis that they may share a common underlying pathogenesis.

**Keywords:** Case report, Habit-tic deformity, Median canaliform nail dystrophy, Nail disorders, Trauma

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Ahmed Ibrahim Ali[1], Ahmed Bakr Elazab[1], Islam Mohamed Eldisoky[2]

Affiliations: [1]Dermatology and Andrology Department, Suez Faculty of Medicine, Suez University, 41552, Egypt; [2]Dermatology registrar at Sheikh Jaber Al-Ahmad Al-Sabah Hospital, Kuwait.

Corresponding Author: Ahmed Ibrahim Ali, Email: Ahmed.abdelhadi@med.suezuni.edu.eg

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## INTRODUCTION

Median canaliform nail dystrophy (MCD) and habit-tic deformity (HTD) are uncommon nail abnormalities that may represent two ends of the same disease spectrum [1]. Both conditions are thought to be associated with repeated trauma, although this is more apparent in HTD and remains controversial in MCD [2]. Reports of their coexistence in the same patient are exceedingly rare.

## CASE REPORT

A 42-year-old man presented to the dermatology clinic with nail deformities affecting both thumbnails for the past two years. He had no relevant medical or drug history and denied occupational trauma or nail-biting. Multiple courses of topical corticosteroids and antifungals had been used without improvement.

Clinical examination revealed distinct features in each thumbnail.

- The left thumbnail demonstrated a series of evenly spaced transverse grooves with a central depression, consistent with HTD (Figure 1B).
- The right thumbnail exhibited a longitudinal median groove with proximal radiating ridges producing a “fir tree” appearance, characteristic of MCD (Figure 1A).

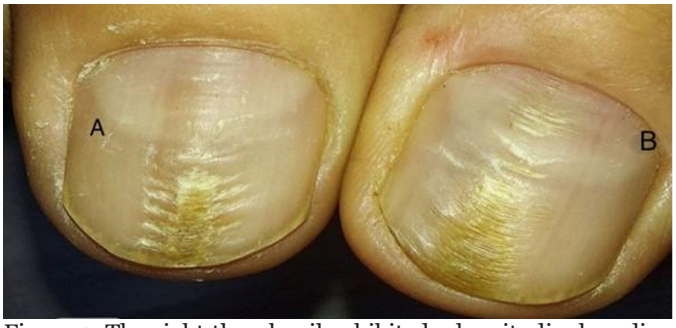


Figure 1: The right thumbnail exhibited a longitudinal median groove with proximal radiating ridges producing a “fir tree” appearance, characteristic of MCD (A). The left thumbnail demonstrated a series of evenly spaced transverse grooves with a central depression, consistent with HTD (B).

The lunulae were enlarged, and the cuticle was intact in the right thumbnail and absent in the left thumbnail. With the exception of minor eczematous changes, the periungual skin and proximal nail folds looked normal. These results led to the diagnosis of concurrent HTD (left thumb) and MCD (right thumb).

## DISCUSSION

Median canaliform nail dystrophy typically presents as a central longitudinal groove with transverse ridges, giving rise to the classic "fir tree" appearance. Habit-tic deformity, in contrast, manifests as multiple transverse depressions without longitudinal splitting (washboard) [1]. The etiological role of trauma in MCD is still up for debate, despite the fact that repetitive trauma is the known cause of HTD. Because of their overlapping features, it could be difficult to distinguish between these entities [3].

The coexistence of both conditions in a single patient is rarely documented. To our knowledge, only a few cases have been reported. Both of our patients' thumbnails showed macrolunula and no cuticles, indicating that their pathogenetic mechanisms were similar. The idea that MCD and HTD might be part of the same disease spectrum rather than two different conditions is further supported by these findings to the best of our knowledge only few were reported [4, 5].

In our patient, both thumbnails demonstrated macrolunula and absence of cuticles, suggesting shared pathogenetic mechanisms. These findings provide further support for the hypothesis that MCD and HTD may lie along a common disease spectrum rather than representing distinct entities.

Clinical differences between median canaliform nail dystrophy and habit-tic deformity are shown in Table 1.

**Table 1:** Clinical differences between median canaliform nail dystrophy and habit-tic deformity

| Feature | Median canaliform nail dystrophy (MCD) | Habit-tic deformity (HTD) |
|---|---|---|
| Main appearance | Longitudinal midline groove with transverse ridges ("fir tree" pattern) | Multiple transverse grooves across the nail plate( washboard nail) |
| Longitudinal splitting | Present (central canal) | Absent |
| Cuticle | Usually normal or intact | Damaged, absent or detached |
| Lunula | Usually intact | Enlarged (macrolunula) |
| Etiology | Controversial; possibly microtrauma or idiopathic | Repetitive trauma (habitual rubbing/picking of proximal nail fold) |
| Histopathology | Non-specific changes; may show spongiosis and hyperkeratosis | Non-specific; consistent with trauma |
| Prognosis | Often self-limiting but may persist | Persists until trauma is eliminated |

## CONCLUSION

We present a rare case of MCD and HTD affecting the same patient's thumbnails. The overlapping clinical features observed support the idea of a shared pathogenesis and that these conditions may be different manifestations of a trauma-induced nail disorder spectrum.

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## Author Contributions

Ahmed Ibrahim Ali – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ahmed Bakr Elazab – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Islam Mohamed Eldisoky – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Written informed consent was obtained from the patient for publication of this article.

## Conflict of Interest
Authors declare no conflict of interest.

## Data Availability
All relevant data are within the paper and its Supporting Information files.

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## ABOUT THE AUTHORS

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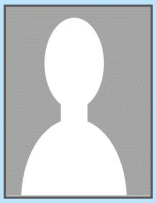
**Ahmed Ibrahim Ali** is Assistant Lecturer in the Department of Dermatology and Andrology at Faculty of Medicine, Suez University, Egypt. He earned the undergraduate degree (Bachelor of Medicine and Surgery) from the Faculty of Medicine, Mansoura University, Egypt and postgraduate degree (Doctoral Degree of Dermatology and Andrology) from Mansoura University. He has published (1 paper) research papers in international academic journals and authored (*Journal of Carcinogenesis*).
Email: Ahmed.abdelhadi@med.suezuni.edu.eg



**Islam Mohamed Eldisoky** is a Registrar of Dermatology Jaber Al Ahmad Alsabah Hospital. Previously, he served as a Resident of Dermatology and Andrology at the Faculty of Medicine, Mansoura University, Egypt. He earned the undergraduate degree (Bachelor of Medicine and Surgery) from the Faculty of Medicine at Mansoura University, Egypt and postgraduate degree (Doctoral Degree of Dermatology and Andrology) from Mansoura University, Egypt.
Email: dr.islameldisoky@yahoo.com

**Ahmed Bakr Elazab** is a Registrar of Dermatology at Wattan Medical Centre, Saudi Arabia, previously Assistant Lecturer of Dermatology and Andrology at Faculty of Medicine, Suez University, Egypt. He earned the undergraduate degree (Bachelor of Medicine and Surgery) from the Faculty of Medicine at Mansoura University, Egypt and postgraduate degree (Doctoral Degree of Dermatology and Andrology) from Mansoura University. He has published (2 papers and one poster) research papers in international academic journals (*Journal of Carcinogenesis*) and authored European academy of dermatology books.
Email: Ahmed.bakr.mohamed@gmail.com

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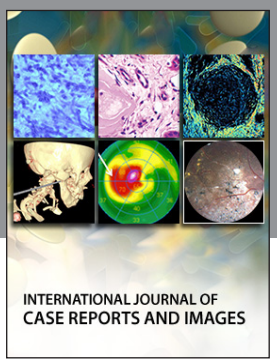




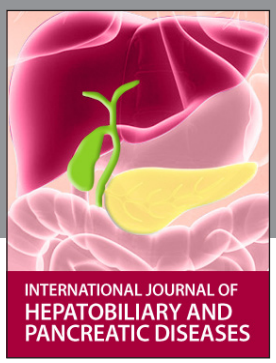




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