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Images in Medicine

Median Canaliform Dystrophy of Heller occurring on thumb and great toe nails

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ABSTRACT

Median Canaliform Dystrophy of Heller is a rare but morphologically striking habit tic deformity of thumb nails characterized by midline longitudinal furrow with multiple transverse parallel lines. The proposed etiopathogenesis is repetitive trauma to the nail plate and cuticle, however some case reports have suggested familial occurrence and use of oral retinoids in its causation. Treatment is often prolonged and unsatisfactory, though some topical agents have been used successfully. We report a case of a young male patient presenting with Median Dystrophy of Heller affecting both Great thumb and toe nails simultaneously.

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Introduction

Median Canaliform Dystrophy of Heller or Onychodystrophia Mediana Canaliformis is a relatively rare albeit striking habit tic deformity of thumb nails characterized by midline longitudinal furrow with multiple transverse parallel lines.¹ Although the proposed etiopathogenesis is repetitive trauma in the form of pushing down the cuticle and proximal nail fold, in majority of cases the cause may be obscure. Some case reports have suggested familial occurrence and use of oral retinoids in its causation.² Treatment is often prolonged and unsatisfactory, though topical agents like 0.1% tacrolimus have been used successfully.³

Clinical and imaging findings

A 22 year old young male patient presented to the dermatology outpatient department with midline depression

deformity of thumb nails of longstanding duration which were causing him cosmetic concern. History of habit tic in the form of repetitive pushing down of cuticle and proximal nail fold with blunt end of pencils and pens over a period of two years was elicited. There was no history of contact with chemicals and/or known allergens. He did not have any family history of nail disorders. On examination, both thumb nails showed midline longitudinal depression with multiple transverse ridges aligned in an inverted fir tree pattern [Fig. 1]. A strikingly similar deformity was noted over both great toe nails [Fig. 2]. However, a review history of a similar habit tic in the form of pushing down cuticle and proximal nail folds of great toe nails was denied by the patient. The rest of the fingernails and toe nails appeared normal. Nail clipping and subungual scraping for fungus were negative on potassium hydroxide mount. He was diagnosed to have Median Canaliform Dystrophy of Heller and prescribed topical 0.1% Tacrolimus ointment to be applied under occlusion overnight daily. A Psychiatric Outpatient referral was made where he was also prescribed Oral Fluoxetine at

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Fig. 1 – Median Dystrophy of Heller affecting both great thumb nails.

Fig. 2 – Median Dystrophy of Heller affecting both great toe nails.

the dose of 50 mg daily. He was put on monthly review, however the case was lost to follow up after first review.

Discussion

Dystrophia unguis mediana canaliformis, solenonychia, nevus striatus unguis or Median Dystrophy of Heller as it is popularly referred to a heterogeneous group of disorders presenting morphologically as median longitudinal groove with transverse ridges fanning out in an inverted fir tree appearance and classically affecting one or both thumb nails.⁴ Although self-inflicted nail trauma involving manipulation of cuticle and proximal nail fold as part of habit tic has been identified as a common cause, familial clustering of cases has been also observed. Certain subungual tumours such as glomus tumour and myxoid cysts have also been implicated in its causation.⁴ Another theory suggests absence of

keratinocytes adhesions within nail matrix with dyskeratosis resulting in central splitting of nail plate due to weaker tensile strength.² One study also revealed a temporal relationship with oral Isotretinoin therapy as also association with dental diseases and macrolunula.⁵ In the absence of family history and habit tic not proven in toe nails, differential diagnosis of underlying lichen striatus, raynauds disease, cysts and tumours maybe entertained. However, the absence of associated involvement of neighbouring skin in case of Lichen striatus and Raynauds disease, as also the lack of proximal periungual/subungual growths and the fact that the condition was asymptomatic and symmetrical in its nature of involvement precluded the possibility of these underlying conditions as a cause in this case.

Management of this rare disorder is challenging as underlying pathogenetic mechanisms remain elusive. A psychiatric referral is invariably indicated where history suggestive of habit tic and/or Obsessive compulsive disorder is present and institution of behavioral therapy with Fluoxetine, a Serotonin reuptake inhibitor (SSRI) usually helps. Topically, agents like 0.1% tacrolimus and 0.05% Tazarotene ointment under occlusion has been described in literature.⁴ In our case, Oral Fluoxetine with topical Tacrolimus oint was exhibited.

Median Dystrophy of Heller continues to intrigue dermatologists by its striking morphology and difficult treatment. The novelty of this case lies in the fact that although history of habit tic was present to explain the dystrophy of thumb nails, the presence of identical lesions over both great toe nails remains interesting and unexplained.

Conflicts of interest

The author has none to declare.

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