**Case Report**

**Twenty Nail Onychomadesis following Acute Viral Hepatitis B Infection**

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**Abstract**

Onychomadesis is a nail plate abnormality with temporary cessation in the growth of the nail plate due to disturbances in the nail matrix. Any local or systemic condition affecting the nail matrix directly or indirectly can lead to onychomadesis. The causes can vary from idiopathic infections to systemic causes. Although onychomadesis is not a finding unique to any disease, it indicates the presence of a preceding trigger, which affects the nail matrix. Here, we report one such case of onychomadesis following acute hepatitis B infection.

**Keywords**: HBV, hepatitis, onychomadesis

**INTRODUCTION**

Onychomadesis is a noninflammatory condition involving the separation of the nail plate from the nail matrix.1,2 It is the temporary stoppage of nail growth due to the involvement of the matrix. The presentation can vary from Beau’s lines to onycholyisis.2 The causes of onychomadesis can be numerous like trauma and dermatological diseases such as eczema, paronychia, systemic conditions, viral illness, drugs, Kawasaki disease, and peripheral ischemia.3-9 Hepatitis B as a cause of onychomadesis does not find a mention in the literature. Here, we report one such rare case.

**CASE REPORT**

A 23-year-old male presented with complaints of changes in both the finger and toenails in the form of painless and palpable splits of the nail plates for the past 2 weeks [Figures 1 and 2]. He was otherwise asymptomatic. He had presented with fever, vomiting, and jaundice 7 weeks back, following which he was admitted and investigated. He was found to be serologically positive for hepatitis B infection (anti-HBsAg and anti-HBeAg Ab) and had elevated liver function tests. He was managed symptomatically with rest, adequate fluid intake, good nutrition including carbohydrate-rich food and antihistamines. He was symptomatically better by 3rd week, and his liver function tests were normal by 5th week. The patient denied any history of recent trauma, drug intake, other previous skin conditions, or exposure to chemicals.

Clinical examination revealed horizontal grooves with onychoschizia proximal to the groove, equidistant from the proximal nail fold in all the fingernails and toenails [Figures 1, 3 and 4]. The nail folds were normal. Routine serum biochemistry and hematology results were normal. Nail clippings were negative for fungal elements. A diagnosis of onychomadesis in all the finger and toenails was made. The onset of nail changes in the patient started 5 weeks after acute viral hepatitis. Hence, we assume that the HBV infection must have triggered the process of nail matrix arrest.

**DISCUSSION**

Onychomadesis is a condition of the nail, in which there is a separation of the nail plate from the nail bed. The exact pathophysiology is not known.10 It is contemplated that there is arrest of nail matrix growth or change in the quality of the nail plate which leads to thinning and splitting of the nails. The insult to the nail matrix can be a systemic or local cause. Later, once...
the nail matrix recovers from the insult, there is reproduction of
the nail plate. Onychomadesis may be considered as the severe
variant of Beau’s lines, which are seen as horizontal ridges over
the nail plates. Onychomadesis leads to complete separation
which in few cases, maybe followed by shedding of the nail
plate. While the Beau’s lines present as thin nail plate with
transverse grooves due to the slowing or cessation in proximal
nail matrix growth, onychomadesis presents as separation from
the plate due to a complete halt in the matrix growth.\[2\]

The process of onychomadesis usually starts in the proximal
part of nail. The causes of onychomadesis may be idiopathic or
secondary to various conditions. The conditions predisposing
to onychomadesis can be trauma, local nail infections,
 systemic disorders (Kawasaki disease, Stevens–Johnson
syndrome, autoimmune diseases, and pemphigus vulgaris),
drugs (chemotherapeutic agents and valproic acid\[3,4\]), and
infections.\[2\] The various infections which may lead to
onychomadesis are diphtheria, hand–foot–mouth disease,
mumps, varicella infection, syphilis, malaria, measles, scarlet
fever, enteric fever, and dermatophytosis due to Trichophyton
tonsurans. Onychomadesis due to trauma or nail matrix
infection usually occurs in few nails, in which the nail matrix
is directly/indirectly affected.

The nail changes are self-limited. Hence, there is no active
management. The underlying etiology should be searched
for and treated. Supportive management in the case of viral
infections or discontinuation of a causative drug helps in the
recovery of the nail from the insult.\[5\] Conservative management
in the form of protection of the nail bed by maintaining short
nails and the use of adhesive tapes on the damaged nails have
been recommended. Few modalities of treatment including
occlusive dressing using keratolytics or topical steroids
have been tried but proved less efficacious. Reassurance and
counseling of the patients form the main part of management.

So far, onychomadesis following viral infections such as
hand–foot–mouth disease (Coxsackie B), measles, and varicella
has been reported in the literature.\[6-9\] Onychomadesis due to
scarlet fever also has been noted. Nail changes in liver disease
patients have been studied previously which showed that
onychomycosis, onycholysis or brittle nails and longitudinal
striations were commonly seen with HBV infection.\[10,11\]
Leukonychia and Terry’s nails have been reported in patients
with hepatitis infection.\[10\] Association of onychomadesis with
hepatitis B virus has not been reported so far.

Our case, in which all the twenty nails had onychomadesis
is being reported to bring to light the role of hepatitis B
viruses as one of the causes of onychomadesis. To the best
of our knowledge, our case is the first reported case of
onychomadesis, which has involvement of all the twenty nails
following acute hepatitis B infection.

Declaration of patient consent
The authors certify that they have obtained all appropriate
patient consent forms. In the form the patient(s) has/have
given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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