

# IDIOPATHIC ACQUIRED LEUKONYCHIA

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## ABSTRACT

A rare case of 29 years old healthy male patient with persistent progressive total whitening of all the finger and toe nails (Idiopathic acquired leukonychia) since the age of 20 years is being presented here. The nail changes were of great concern in terms of social embarrassment to the patient. Idiopathic acquired leukonychia is a rare chromatic disorder of the nails not associated with other abnormalities and discernible etiology. To the best of our knowledge, probably it is the second case report from India after the first one reported from Mumbai earlier. Hence it is presented here for its rarity.

**Key Words:** Idiopathic acquired leukonychia; leukonychia totalis; leukonychia partialis

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## INTRODUCTION

Idiopathic acquired leukonychia (IAL) is a rare chromatic disorder of nails which is not associated with other abnormalities and discernible etiology. It is described as whitening of nail plate. Mees in 1919 described it for the first time as an associated finding in arsenic intoxication<sup>1</sup>.

True leukonychia may be classified on the basis of white blotches known as leukonychia punctata, leukonychia striata, leukonychia partialis, leukonychia totalis<sup>2</sup> (Table 1). IAL is much rarer clinical entity.

A case of 29 year old male with development of bilateral simultaneous symmetrical synchronous total whitening of fingers and nails is being presented here for its rarity.

## CASE REPORT

A 29 year old healthy male patient presented with complaints of colour changes on the nails in the form of total whitening of all the finger nails and the toes.

Detailed history revealed that he was born out of a non-consanguineous marriage and his developmental milestones were normal. He had one brother and a sister without any features of the disease in them. At the age of 20 years, he developed bilateral symmetrical total whitening of finger and toe nails and this involvement was simultaneous and synchronous. There was no clinical evidence of atopy, lichen planus, alopecia areata or psoriasis and the family history was non contributory. He had no significant childhood illness, trauma or surgery and no addictions. He was not receiving systemic or topical drugs and was not exposed to any chemical agent. On examination, true leukonychia totalis of the finger nails and true leukonychia partialis of toe nails was seen (Figure 1 a and b).

The nails were strikingly white, opaque with smooth surface and normal strength. The nailbeds, nailfolds and the edges of the nails were normal. No abnormality was detected in the teeth, the eyes, hair, skin of the body, palms and soles. The nails were repeatedly negative for fungus on scrapping and had no fungal growth on cultures. Examination of the CNS and peripheral vascular

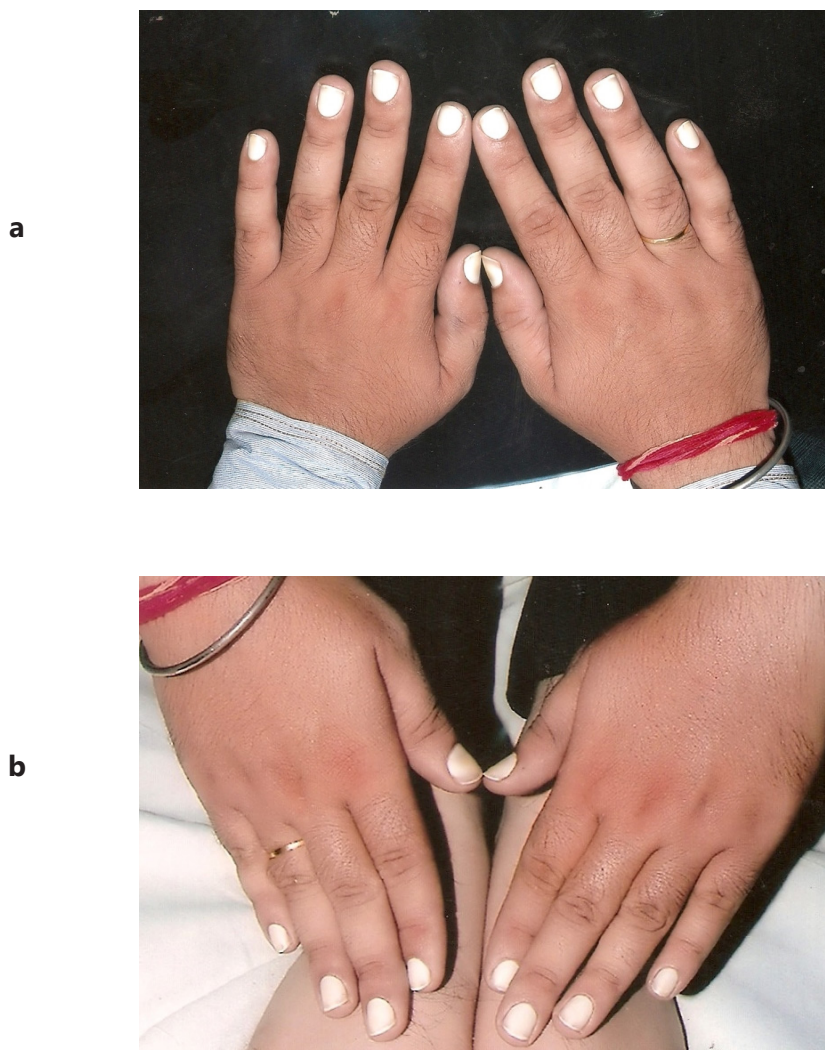
**Table 1: Classification of true leukonychia<sup>2</sup>**

(A) Hereditary – it can be
(1) Isolated
(2) Associated with Bart-Pumphrey syndrome, Bauer syndrome, Heimler syndrome, Deafness syndrome, Lowry-Wood syndrome, Flotch syndrome, Leopard syndrome, Congenital hyperparathyroidism.
(B) Acquired
(1) Idiopathic
(2) Associated with Trauma, Drugs, Infections, Inflammatory disease, Exposure to cold, Disturbed nutrition, Hypothyroidism, Cataract, Peptic ulcer disease, Cholelithiasis, Keratoderma, Hypotrichosis.

**Table 2: True acquired idiopathic leukonychia: An overview of reported cases**

Authors	Presentations	Active Disease (years)
Claudel et al <sup>3</sup>	Leukonychia totalis and partialis	2
Grossman et al <sup>4</sup>	Leukonychia partialis to a combined partialis and totalis	3
Stewart et al <sup>5</sup>	Leukonychia totalis and partialis	Unrelated
Park et al <sup>6</sup>	Leukonychia partialis to leukonychia totalis	13
Butterworth <sup>7</sup>	Leukonychia totalis and partialis	Unrelated
Our case	Leukonychia totalis and partialis	9

**Figure 1: Idiopathic Acquired Leukonychia in a 29 year old male**



system was normal. The laboratory profile, including Hemoglobin, Total Leucocyte Count, Differential Leucocyte Count, Blood urea, S. Creatinine, S. Bilirubin, Aspartate transaminase, Alanine transaminase, total and differential proteins, was all normal.

## DISCUSSION

Leukonychia is a whitening of the nail plate. It was first described by Mees in 1919, as an associated finding in arsenic intoxication<sup>1</sup>. It can be a true leukonychia that

involves the nailplate. In pseudo (apparent) leukonychia, there is involvement of subungual tissue due to onycholysis or subungual hyperkeratosis or pathology of matrix or nailbed instead of nailplate<sup>2</sup>. True leukonychia may be total or subtotal or temporary or permanent. Partial leukonychia can be punctuate, transverse and distal. The physiologic mechanism leading to development of leukonychia is not entirely clear. According to Newton's theorem, a surface appears white when it reflects the radiation of visible light thus explaining leukonychia. Since true leukonychia is thought to be due to abnormal matrix keratinization, with persistent parakeratosis and keratohyaline granules in the nail plate, so parakeratosis and dissociation of the keratin bundles may play a role in the modification of the solar light reflection by the unguinal plates<sup>2</sup>.

Most of the true leukonychia cases are inherited. No such associations with any of the above mentioned syndromes were seen in the present case. To the best of our knowledge, only 7 cases of idiopathic true leukonychia have been reported in the world literature<sup>2-7</sup> (Table 2). In India, one case has been reported from Mumbai<sup>8</sup> and the second case from India is being reported here for its rarity from this part of the country.

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