

Half and half nail or Lindsay's nail: An overlooked physical finding in chronic kidney disease

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CASE STUDY

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ABSTRACT

A 62-year-old diabetic patient came to the outpatient department due to increasing tiredness in the past few months. On examination, his distal half of fingernails revealed pinkish red transverse band which is sharply demarcated by a dull white band proximally, consistent with half and half nail. Further evaluation showed evidence of chronic kidney disease due to long standing poorly controlled diabetes. Although half and half nail is seen in many conditions, it is relatively a specific clinical marker of end stage kidney disease and hence serves as an important diagnostic clue.

Key Words

Half and half nail, chronic kidney disease, uraemia

Implications for Practice:

1. What is known about this subject?

Half and half nail is characterised by a brownish red distal band occupying 20–60 per cent of the nail with the sharp demarcation by white proximal band. This abnormal discoloration is closely related to chronic kidney disease.

2. What new information is offered in this case study?

Half and half nail is a forgotten clinical sign, relatively a specific clinical marker of chronic kidney disease. It is very useful clinically and may avoid unnecessary kidney biopsy especially in a resource poor setting.

3. What are the implications for research, policy, or practice?

Half and half nail serves as an important clue in making the diagnosis of chronic kidney disease. Also, whenever the previous creatinine reports are unavailable one can rely on this clinical sign in diagnosing end stage renal disease.

Background

It is more than half a century after William B Bean's first description, and the exact underlying mechanism of Half and half nails (also known as Lindsay's nail) is still unknown.¹ Its close association with chronic renal disease as described by Baran and Gioanni way back in 1968,² lead to postulate certain hypothesis. The uremic substances may stimulate melanocytes leading to increased melanin deposition in the distal half of nail. But there is no correlation between the amount of retained uremic substances in the body and the length of transverse band. Furthermore, this nail discoloration may not regress with haemodialysis.^{3,4} Whatever may be the mechanism, Half and half nail is an important clinical finding in patients suffering from chronic kidney disease and serves as a diagnostic clue.

Case details

A 62-year-old man with the history of diabetes came to the outpatient department due to increasing tiredness in the past few months. His vital signs were stable and systemic examinations were unremarkable. On close observation, his distal half of fingernails revealed pinkish red transverse band which is sharply demarcated by a dull white band proximally, consistent with half and half nail (Figures 1 and 2). His blood investigations revealed poorly controlled diabetes with glycated haemoglobin of 12 per cent and serum creatinine was 3.6mg/dl. Ultrasonography showed bilateral small kidneys (right kidney 7.3cm, left kidney 7.6cm

with grade III renal parenchymal changes) and retinopathy changes were present on fundus examination.

Discussion

Half and half nail was initially described in 1963 by William B Bean in two of his patients with renal diseases.¹ It is also known as Lindsay's nail who named it half and half nails in 1967. Although not pathognomonic it is found in approximately 40 per cent of patients having chronic kidney disease.³

It is characterized by brownish red distal band occupying 20–60 per cent of the nail bed with the sharp demarcation by white proximal band. It is more common in fingernails but may occur in toenails also. There is no relation between length of band and serum creatinine levels.³

Reason for its development is largely unknown. One postulated hypothesis is that toxic substances of uraemia may stimulate melanocytes leading to increased melanin deposition in the distal half of nail.⁴ Few other explanations are increased nail bed capillary density and thickening of the capillary walls. Chronic anaemia may be the reason for proximal white band.⁴

Similar type of nail changes are also described in Crohn's disease, Kawasaki's disease, Behcet's disease, cirrhosis, zinc deficiency, pellagra and HIV infection. However, it is relatively a specific clinical marker of end stage kidney disease. The half and half nail may disappear completely after successful kidney transplantation but usually remains unchanged with haemodialysis.^{5,6}

The Half and half nail should be distinguished from one more close entity known as Terry's nails or white nails seen in chronic liver disease. Due to decreased vascularity here the nail plate turns white, giving the ground glass appearance.⁷

Conclusion

In conclusion half and half nail may serve as an important clue in making the diagnosis of chronic kidney diseases. Therefore, examination of the nails should be an integral part of complete general physical examination.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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None

PATIENT CONSENT

The authors, Madhyastha S, Gopaldaswamy V, Acharya R, Bekur R, declare that:

1. They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
2. All possible steps have been taken to safeguard the identity of the patient(s).
3. This submission is compliant with the requirements of local research ethics committees.

Figure 1: Half and half nail

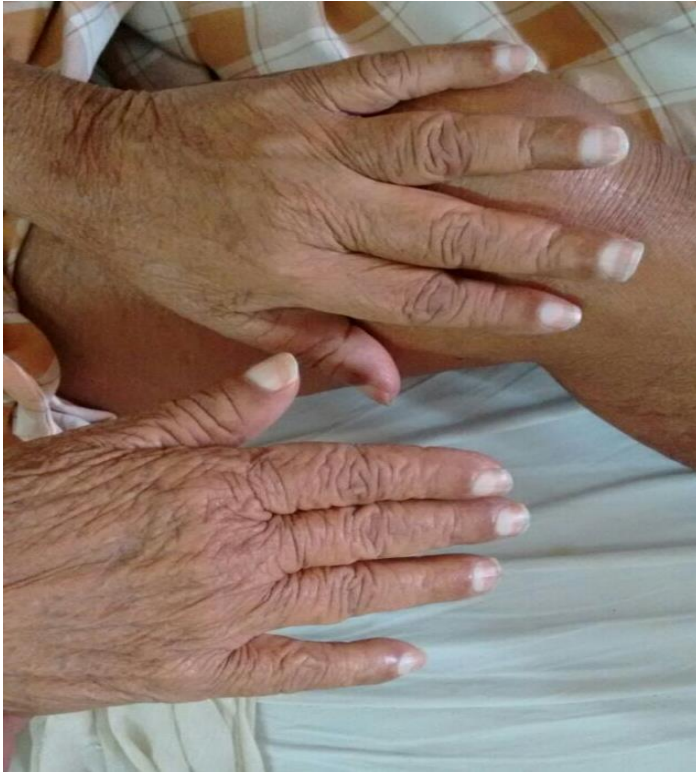


Figure 2: Closer view revealing pinkish red transverse band which is sharply demarcated by a dull white band proximally

