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REVIEW ARTICLE

IDIOPATHIC CLUBBING IN A YOUNG MALE

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ABSTRACT

Background: Digital clubbing is a common sign of underlying systemic illness, particularly cardiopulmonary or gastrointestinal disease. Idiopathic clubbing is extremely rare and is often a diagnosis of exclusion. Primary hypertrophic osteoarthropathy (PHO), a rare genetic disorder, may initially present with isolated clubbing, creating diagnostic uncertainty. Case Presentation A 26-year-old previously healthy male presented with progressive swelling and broadening of the fingertips and toes over two years. Examination revealed grade 3 digital clubbing of all four limbs. He had no systemic symptoms such as fever, or any respiratory, cardiac, or gastrointestinal complaints. There was no relevant family history or history of cyanotic spells in childhood. Investigations revealed a normal chest X-ray and echocardiography. High-resolution CT thorax showed a few fibrotic bands in the medial segment of the right middle lobe. Oxygen saturation was 98% at room air. Ultrasound abdomen, CBC, LFT, RFT, ESR (13 mm/hr), and CRP (10 mg/L) were within normal limits. Viral serologies (HIV, HBsAg, HCV) were negative. ANA was negative, and thyroid profile was normal (TSH 5.0 mIU/L with normal T3 and T4). X-rays of hands and feet revealed no periosteal reaction. **Discussion:** This case highlights the diagnostic challenge between idiopathic clubbing and early PHO. The lack of systemic features, normal oxygenation, and absence of radiological signs point toward idiopathic clubbing. However, early or incomplete PHO cannot be excluded entirely, and longitudinal follow-up is required. **Conclusion:** In rare cases like this, idiopathic digital clubbing should be considered after excluding systemic, infectious, and autoimmune causes. Follow-up is essential to monitor for progression to primary hypertrophic osteoarthropathy or emerging secondary etiologies.

Citation: **Tanya Thakur.** ***2025.*** *"Idiopathic clubbing in a young male.". International Journal of Current Research, 17, (10), 35090-35093.*

INTRODUCTION

Digital clubbing is a clinical sign defined by bulbous enlargement of the distal phalanges and increased curvature of the nails. It is most often associated with chronic pulmonary, cardiac, hepatobiliary, or gastrointestinal disorders. In rare instances—less than 1% of the general population—it presents without an identifiable underlying cause and is termed idiopathic (1). Clubbing may occur as an isolated finding or as a component of hypertrophic osteoarthropathy (HOA), a syndrome characterized by periostosis of long bones and, occasionally, painful joint swelling. Although once thought to be exclusively linked to pulmonary disease, HOA has since been reported in a range of non-pulmonary conditions, and even in patients with no systemic illness. In such cases, the condition is referred to as primary hypertrophic osteoarthropathy (PHO) or pachydermoperiostosis.(1)(2)

CASE PRESENTATION

We describe a rare case of a 26-year-old male with progressive, bilateral digital clubbing over a two-year period, in the absence of systemic symptoms or identifiable pathology. This case highlights the potential for isolated clubbing to represent an early or incomplete form of PHO, underscoring the importance of continued clinical monitoring when the underlying cause remains unclear.(3) Moreover, current literature offers limited guidance on monitoring or management strategies for such patients, highlighting a gap in both understanding and clinical practice. A 26-year-old male presented with a two-year history of gradually progressive swelling of the fingertips and toes. He first noticed broadening of his nails and soft tissue fullness over the distal digits, which had progressed to visible bulbous enlargement. Though asymptomatic, the patient expressed concern about the cosmetic appearance of his fingers and toes, which he found increasingly noticeable. There was no associated pain, redness, or joint stiffness. He denied any history of fever, weight loss, cough, breathlessness, hemoptysis, chest pain, cyanotic spells in childhood, or gastrointestinal complaints such as abdominal pain, vomiting, or bleeding per rectum. There was no history of similar symptoms in family members, and he was a lifelong non-smoker with no exposure to biomass fuels or industrial pollutants. Clinical examination revealed grade 3 digital clubbing involving both hands and feet, with obliteration of the Lovibond angle and nail bed fluctuation. There was no evidence of cyanosis, edema, skin thickening (pachydermia), or joint abnormalities. The rest of the systemic examination was unremarkable. Investigations revealed a normal chest X-ray. High-resolution CT of the thorax showed a few fibrotic bands in the medial segment of the right middle lobe, with no signs of interstitial lung disease, bronchiectasis, or neoplastic lesions. 2D echocardiography was normal with no structural or valvular abnormalities and no evidence of right-to-left shunting. Peripheral oxygen saturation was 98% at room air. Ultrasound of the abdomen showed no hepatosplenomegaly or other abnormalities. CBC, renal

and liver function tests, inflammatory markers, and autoimmune serology (ANA) were within normal limits. Viral serologies (HIV, hepatitis B, and hepatitis C) were non-reactive. Thyroid function tests were within normal limits. X-rays of hands and feet showed no evidence of periosteal reaction or acro-osteolysis. Based on clinical presentation and available investigations, a diagnosis of idiopathic digital clubbing versus early primary hypertrophic osteoarthropathy was considered. The patient was reassured regarding the benign nature of the condition and scheduled for regular follow-up to monitor for any clinical or radiological progression.

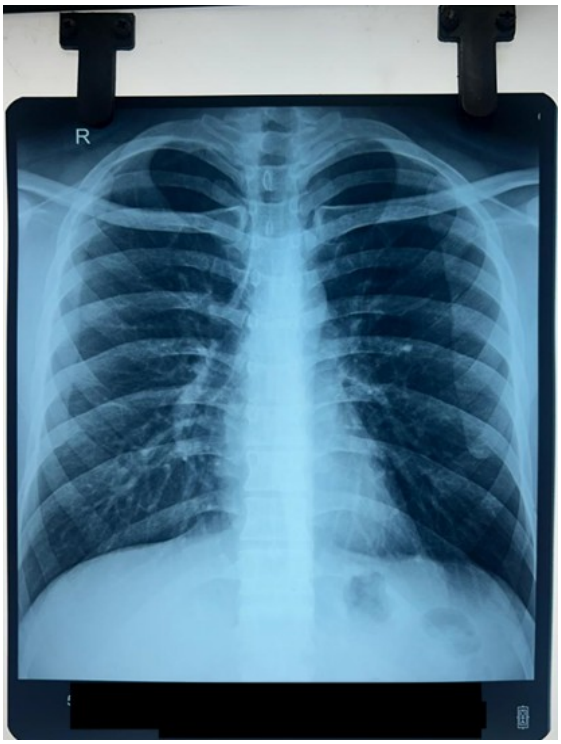

Figure 1. CXR-PA view demonstrates clear lung fields, well-defined diaphragmatic contours, and normal cardiac silhouette

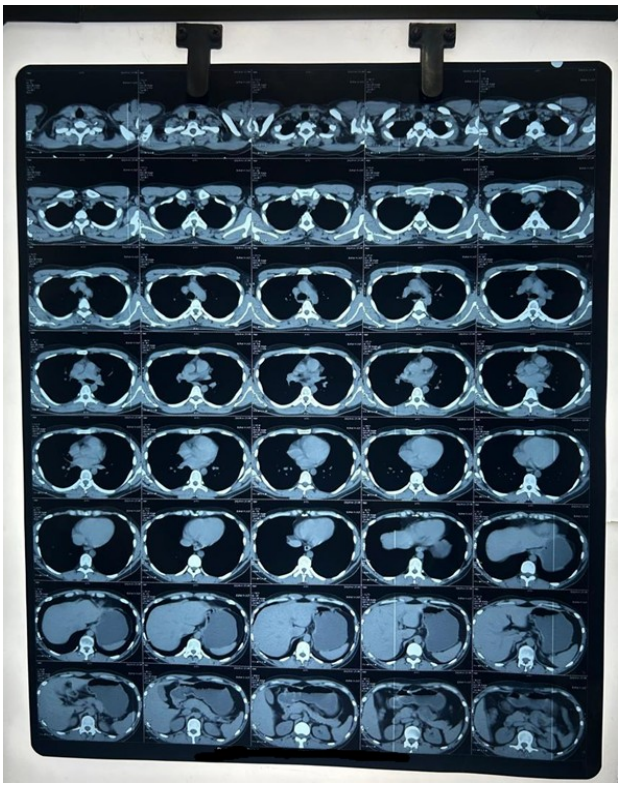

Figure 1. Axial CECT thorax showing normal lung parenchyma, mediastinum, and upper abdominal structures without evident pathology

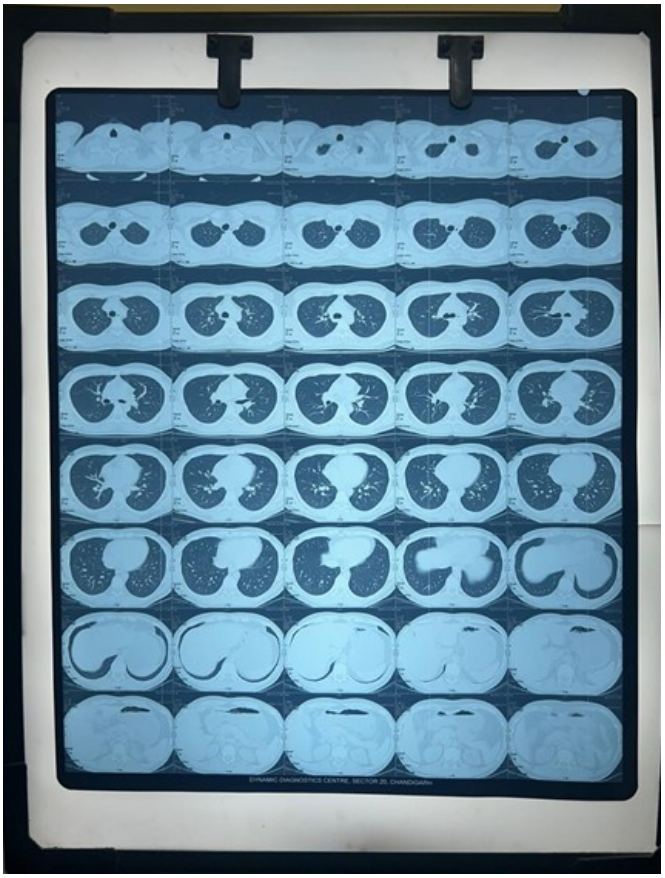

Figure 2. High-resolution CT (HRCT) thorax reveals no evidence of interstitial lung disease, bronchiectasis, or neoplastic lesion. A few fibrotic bands noted in the medial segment of the right middle lobe

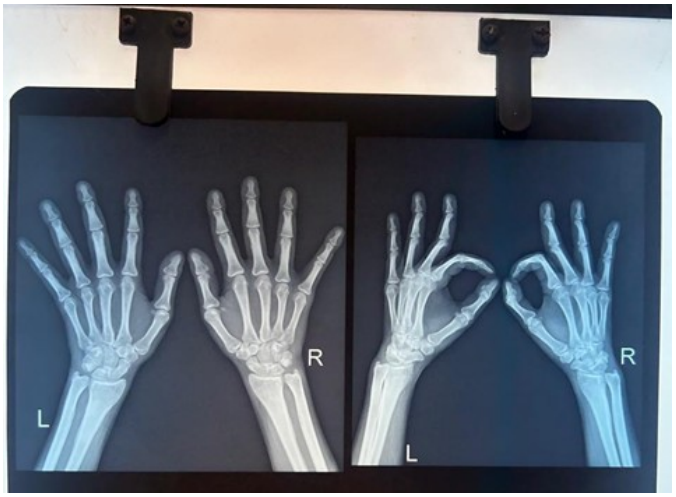

Figure 3. X rays of bilateral hands without any evidence of periosteal reaction

DISCUSSION

Digital clubbing is a classic clinical sign typically signalling cardiopulmonary, hepatic, or gastrointestinal pathology. When extensive evaluation fails to reveal any secondary cause, clinicians must consider idiopathic clubbing—a diagnosis made by exclusion and documented in only a few cases. The hallmark of digital clubbing is a localized bulbous enlargement of the finger and/or toe terminal segments brought on by connective tissue proliferation between the distal phalanx and nail matrix. The nails' lateral and anteroposterior diameters both expand as a result of this (1). In our patient, the only notable finding was a few fibrotic bands in the right middle lobe on HRCT, which seemed clinically insignificant and unlikely to account for the degree of clubbing. No evidence of chronic hypoxia, cyanosis, or systemic illness was present, and oxygen saturation remained normal.

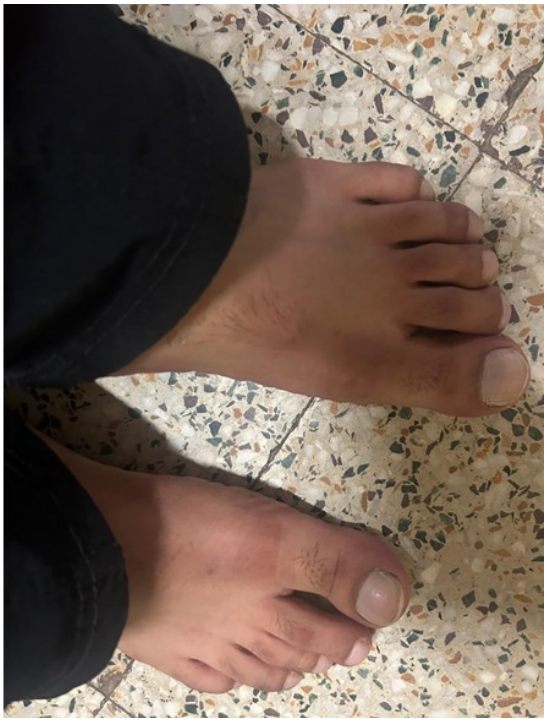

Figure 4 Bilateral clubbing of feet noticed

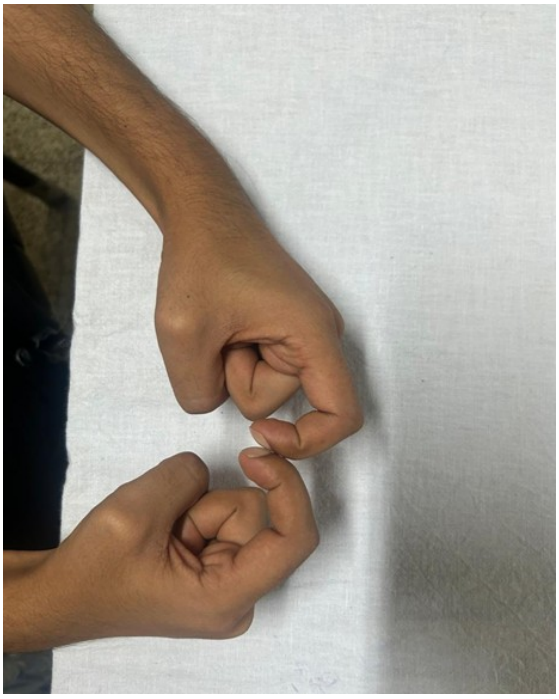

Figure 5. Bilateral clubbing of fingers of hands

A key diagnostic consideration is primary hypertrophic osteoarthropathy (PHO)—also known as pachydermoperiostosis—a rare genetic syndrome marked by clubbing, periosteal bone changes, and skin thickening. However, incomplete or early PHO may present with digital clubbing alone, without periostosis, arthralgia, or pachydermia. A few similar cases have been documented in literature. Nayak et al. reported a young male with incomplete PHO presenting with digital clubbing and periosteal reaction but no skin or joint involvement, managed conservatively with stable follow-up (4). Das et al. described a 28-year-old male with classic PHO features, including pachydermia and joint swelling. In contrast, our patient lacks joint symptoms, periostosis, or skin changes, making idiopathic clubbing or early PHO the most likely diagnoses. The pathogenesis of both idiopathic and secondary clubbing is hypothesized to involve

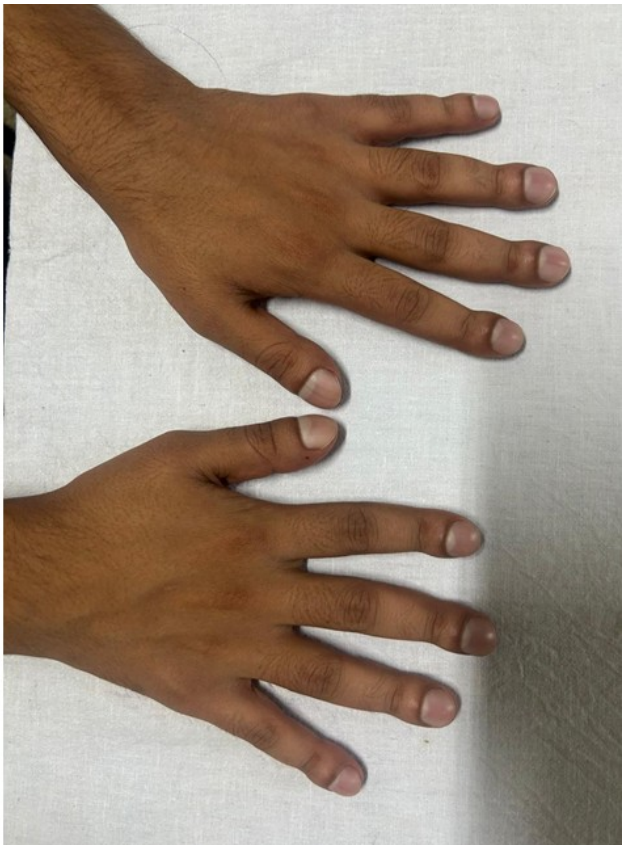

Figure 6. Bilateral clubbing of fingers of hands

platelet-derived growth factor (PDGF) and vascular endothelial growth factor (VEGF), released by megakaryocytes bypassing the pulmonary circulation. These factors stimulate vascular proliferation and connective tissue hypertrophy in the nail bed (5). Given the absence of a systemic cause and the current lack of radiological or dermatologic findings, idiopathic clubbing appears to be the most plausible diagnosis at this time. However, careful follow-up is warranted, as incomplete PHO may evolve over time (5).

CONCLUSION

This case highlights the diagnostic challenge of isolated digital clubbing in the absence of an identifiable underlying cause. While idiopathic clubbing remains the most plausible diagnosis at this point, early or incomplete PHO cannot be definitively excluded. Ongoing clinical surveillance will be essential to detect any progression or emergence of characteristic features. By reporting this uncommon presentation, we aim to contribute to the limited literature on idiopathic clubbing and reinforce the importance of sustained clinical vigilance in similar cases.

LEARNING POINTS

- Isolated digital clubbing may represent idiopathic clubbing or early primary hypertrophic osteoarthropathy (PHO).
- PHO can initially present with clubbing alone, without joint or skin changes.
- Normal oxygenation and absence of systemic disease do not exclude evolving pathology.
- VEGF and PDGF are key mediators in the pathogenesis of clubbing.
- Long-term follow-up is essential in unexplained cases to monitor for disease progression.

PATIENT PERSPECTIVE

The patient initially experienced considerable anxiety, fearing that digital clubbing signified a serious underlying illness. The uncertainty

and need for extensive investigations contributed to his distress. Following comprehensive evaluation and clear communication of findings, his concerns were alleviated. He now feels reassured and confident in the proposed follow-up plan.

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