Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Rheumatology

Hypertrophic Osteoarthropathy Secondary to Lung Carcinoma

Sara Belouaham[1*], Hajar Arabi[2], Fatima Ezzahra Bouia[3], Ahmed Mougui[4], Imane El Bouchti[5]

[1,3]Rheumatology Resident, Rheumatology Department University Hospital Centre Mohammed VI Marrakech
[2]Rheumatologist, Rheumatology Department University Hospital Centre Mohammed VI Marrakech
[4,5]Professor of Rheumatology, Rheumatology Department University Hospital Centre Mohammed VI Marrakech

DOI: https://doi.org/10.36347/sjmcr.2025.v13i05.102 | **Received:** 19.04.2025 | **Accepted:** 23.05.2025 | **Published:** 24.05.2025

***Corresponding author:** Sara Belouaham
Rheumatology Resident, Rheumatology Department University Hospital Center Mohammed VI Marrakech

Abstract **Case Report**

Hypertrophic osteoarthropathy (HOA) is defined by a combination of cutaneous, osseous, articular, and acromelic features, which exhibit proportional variability. Although rare, awareness of this condition is crucial due to its potential association with neoplasms, especially of pulmonary origin. We report the case of a 58-year-old male patient in whom hypertrophic osteoarthropathy was diagnosed as a secondary manifestation of lung carcinoma.

Keywords: Hypertrophic osteoarthropathy, Lung carcinoma, Paraneoplastic syndrome, Digital clubbing.

INTRODUCTION

Hypertrophic osteoarthropathy (HOA) is a rare syndrome characterized by joint pain, digital clubbing, and periosteal bone changes. Though uncommon, its recognition is clinically significant due to its frequent association with serious underlying conditions, particularly pulmonary malignancies. Previous studies have distinguished between primary genetic forms and secondary forms linked to diseases such as lung cancer. Advances in understanding its pathophysiology have highlighted the role of growth factors, but HOA remains underdiagnosed due to its varied presentation. This article presents a case of secondary HOA revealing lung carcinoma, emphasizing the importance of considering systemic causes in persistent joint symptoms. The case illustrates the value of early imaging and multidisciplinary care, and adds to the limited documentation of HOA as a paraneoplastic manifestation.

CASE REPORT

We report the case of a 58-year-old male, a former construction worker, and a chronic smoker with a 15 pack-year history, who had quit six years earlier. He had no history of pulmonary tuberculosis and reported no recent contact with individuals affected by the disease. The patient presented to the rheumatology clinic with mixed-pattern polyarthralgia evolving over 18 months, primarily affecting the ankles, knees, and elbows, with a pain score of 7/10 on the visual analog scale (VAS). This was accompanied by significant weight loss of 10 kg over two months. Physical examination revealed digital clubbing (Figure 1).

Laboratory tests showed elevated inflammatory markers (ESR = 98 mm at 1 hour), with a negative immunological work-up (rheumatoid factor, anti-CCP antibodies, antinuclear antibodies, and anti-dsDNA antibodies all negative).

Standard radiographs revealed bilateral cortical thickening of the posterior diaphyseal surfaces of both tibia and fibula, suggestive of periosteal reaction (Figures 3–4). The diagnosis of hypertrophic osteoarthropathy was considered, prompting a chest X-ray, which showed a dense, heterogeneous, spiculated opacity in the lower lobe of the right parahilar lung field. This opacity was associated with areas of hyperlucency and adjacent reticular and micronodular infiltrates consistent with carcinomatous lymphangitis (Figure 2).

The patient was referred to the pulmonology department for further management. A CT-guided biopsy confirmed the diagnosis of infiltrative pulmonary carcinoma. As part of staging, an abdominal CT scan was performed and revealed a tumefaction of the pancreatic head.

The patient underwent combined therapy with radiotherapy and chemotherapy. Radiotherapy was administered over five weeks. Simultaneously, chemotherapy was initiated in three-week cycles. Clinical improvement was noted, with significant

regression of arthralgia observed by the end of the second chemotherapy cycle. The patient reported marked pain relief, with a VAS score dropping to 3/10 compared to 7/10 at baseline.

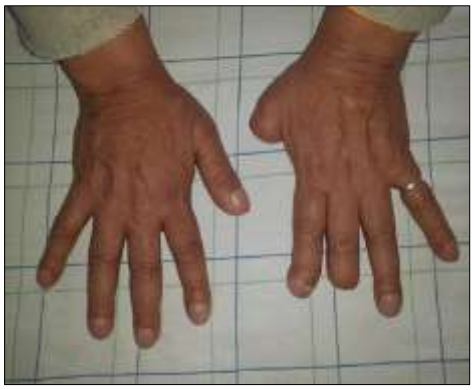

Figure 1: Digital clubbing

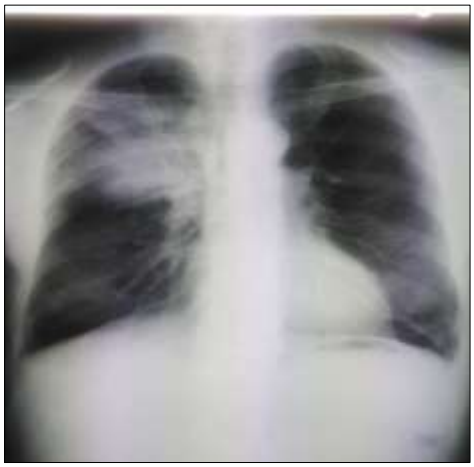

Figure 2: Chest X-ray showing a dense, heterogeneous, spiculated opacity in the lower lobe of the right parahilar field with associated reticular and micronodular infiltrates

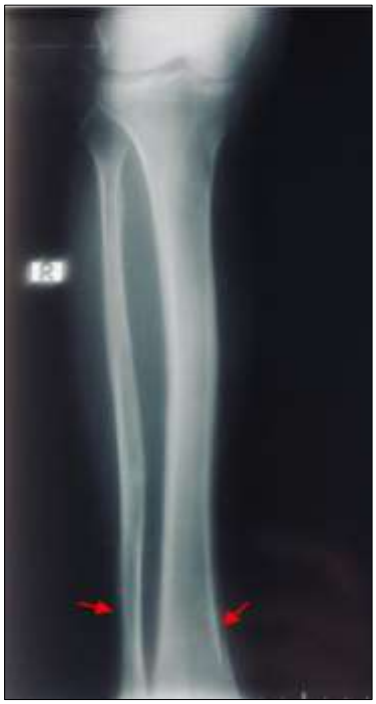

Figure 3: Right leg radiograph showing tibial and fibular diaphyseal periosteal apposition (red arrows)

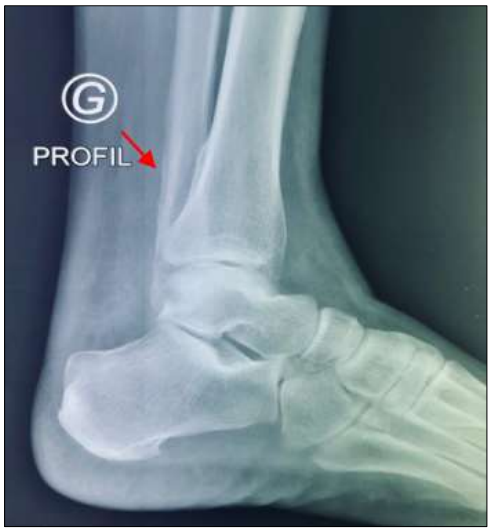

Figure 4: Lateral view of the left ankle radiograph showing fibular periosteal apposition (red arrow)

DISCUSSION

Hypertrophic osteoarthropathy (HOA) is a rare syndrome characterized by digital clubbing, periostosis of long bones, arthralgia, and cutaneous signs [1]. It presents in two main forms: the primary form, also known as pachydermoperiostosis, which is often of genetic origin; and the secondary form, frequently associated with underlying diseases—most notably pulmonary neoplasms[2, 3].

Clinically, joint involvement is the most common presenting feature, usually in the form of mechanical and/or inflammatory arthralgia, mainly affecting the knees and ankles [4]. An inflammatory syndrome is typically present, with elevated erythrocyte sedimentation rate (ESR). Radiographs of long bones reveal pathological periosteal thickening termed periostosis [4]. Scintigraphic abnormalities may precede radiographic signs, allowing earlier diagnosis [5].

Recent advances in pathophysiology have implicated several growth factors, including platelet-derived growth factor (PDGF), transforming growth factor β1 (TGF-β1), and vascular endothelial growth factor (VEGF) [3].

The management of secondary HOA focuses on treating the underlying cause. In cases of malignancy, tumor resection or radiotherapy may induce symptom regression, although acromelic symptoms may reappear in the event of relapse or metastasis[2]. Symptomatic treatments such as non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids may be considered [6]. Promising results have also been reported with pamidronate in specific cases [7, 8].

It is essential to adopt a multidisciplinary approach to HOA management, involving close collaboration among specialists to ensure optimal care.

CONCLUSION

Bilateral and symmetrical periostosis of long bones, especially in the absence of underlying bone lesions, should raise suspicion for hypertrophic osteoarthropathy. In such cases, a chest radiograph is essential to investigate potential thoracic pathology, particularly pulmonary carcinoma.

REFERENCES

1. Mendlowitcz M. Clubbing and hypertrophic osteoarthropathy. *Medicine*. 1942;21:269–306.
2. Morin F, Marcelli C. Osteoarthropathie hypertrophiante. *EMC – Appareil locomoteur*. 2002 [Article 14-260-A-10].
3. Izumi M, Takayama K, Yabuuchi H, et al. Incidence of hypertrophic pulmonary osteoarthropathy associated with primary lung cancer. *Respirology*. 2010;15:809–812.
4. Pineda C, Martínez-Lavín M. Hypertrophic osteoarthropathy: What a rheumatologist should know. *Rheum Dis Clin North Am*. 2013;39:383–400.
5. Vogl A, Blumenfeld S, Gutner LB. Diagnostic significance of pulmonary hypertrophic osteoarthropathy. *Am J Med*. 1955;18(1):51–65.
6. Li SS, He JW, Fu WZ, et al. Features of primary HOA and therapeutic response to etoricoxib: a prospective study. *J Bone Miner Res*. 2017;32:1659–1666.
7. Speden D, Nicklason F, Francis H, Ward J. Pamidronate use in hypertrophic pulmonary osteoarthropathy. *Aust NZ J Med*. 1997;27(3):307–310.
8. Jojima H, Kinoshita K, Naito M. Pachydermoperiostosis treated with bisphosphonates and synovectomy. *Mod Rheumatol*. 2007;17:330–332.