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OMISSION OF HYPERTROPHIC OSTEOARTHROPATHY DELAYS THE EARLY DIAGNOSIS OF A LUNG NEOPLASM

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ABSTRACT

Introduction. Hypertrophic osteoarthropathy (HOA) is a syndrome characterized by periostitis of the long (tubular) bones, clubbing of the digits and arthritis. Less than 4,5% of the lung cancer patients developed hypertrophic osteoarthropathy as a paraneoplastic manifestation.

Case presentation. We present a case of a 59 year old man, smoker presents for 18 months recurrent symmetric arthritis of knee. He lost 6 kilograms and he had no pulmonary symptoms. Physical examination revealed digital clubbing with watch-glass nails painless of all fingers, joint effusion of the knees. Laboratory results revealed only inflammatory syndrome and anaemia of chronic disease. The X-rays revealed periosteal appositions at the tibia, fibula and femur, mass in the left lower lobe. Computed tomography confirmed lung tumor and biopsy showed the malignant character of the tumor.

Conclusion. The index of suspicion for OAH should be high in a patient with symmetrical arthritis who associates Hippocratic fingers.

Keywords: hypertrophic osteoarthropathy, Hippocratic fingers, symmetrical arthritis, lung cancer.

Introduction

Hypertrophic osteoarthropathy (HOA) is a syndrome characterized by periostitis of the long (tubular) bones, clubbing of the digits and arthritis (1). Very often this syndrome is expressed in an incomplete form only with Hippocratic fingers.

HOA can be primary or secondary (associated with neoplasms or other pathological conditions). Secondary HOA, as a paraneoplastic syndrome, occurs most frequently in intrathoracic tumors, over 80% of the etiology of secondary HOA being represented by lung neoplasm (2). Less than 4,5% of the lung cancer patients developed HOA as a paraneoplastic manifestation, however, patients with HOA rarely showed the complete triad of signs. (3).

Secondary HOA usually occurs after the onset of the underlying disease, but can sometimes be the first manifestation of lung cancer.

Case Presentation

A 59 year old man, smoker (40 pack-years), presents for 18 months recurrent symmetric arthritis of knee. Each episode is identical and remits after 3 weeks of non-steroidal anti-inflammatory drugs (NSAIDs). He underwent magnetic resonance imaging (MRI) at the knees 4 months ago, which revealed meniscus tears and

performed bilateral partial meniscectomy. He is hospitalized in our clinic because arthritis with the same location has been reappearing for 2 months, but he is no longer referred to NSAIDs.

The patient has been noticing changes in his fingernails for 2 years, has lost 6 kg in the last 6 months, but has no signs or symptoms in recent history that suggest the etiology of arthritis - without infections, spinal pain, skin lesions, eye damage etc. He had no pulmonary symptoms (such as cough, shortness of breath, chest pain, hemoptysis).

Physical examination revealed digital clubbing with watch-glass nails painless of all fingers, inflammatory joint effusion of the knees, the rest within normal limits. The blood test results were shown in table 1. Laboratory results revealed only inflammatory syndrome and anemia of chronic disease; the rheumatologic markers including antinuclear antibodies (ANA), rheumatoid factor and anti-citrullinated protein antibodies (anti-CCP) were negative.

Tibia, femur and fibula X-ray revealed periosteal appositions. (Figure 1, 2).

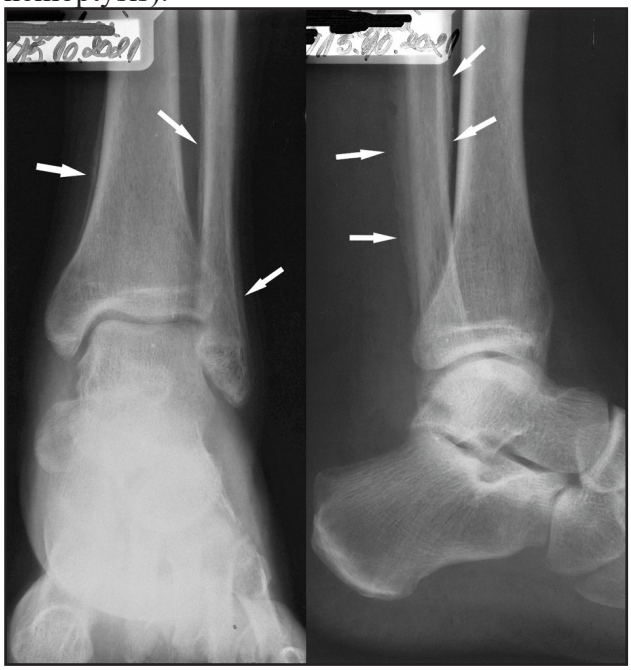

Figure 1 Conventional radiography; The image shows periosteal appositions on the tibia and fibula (arrow)

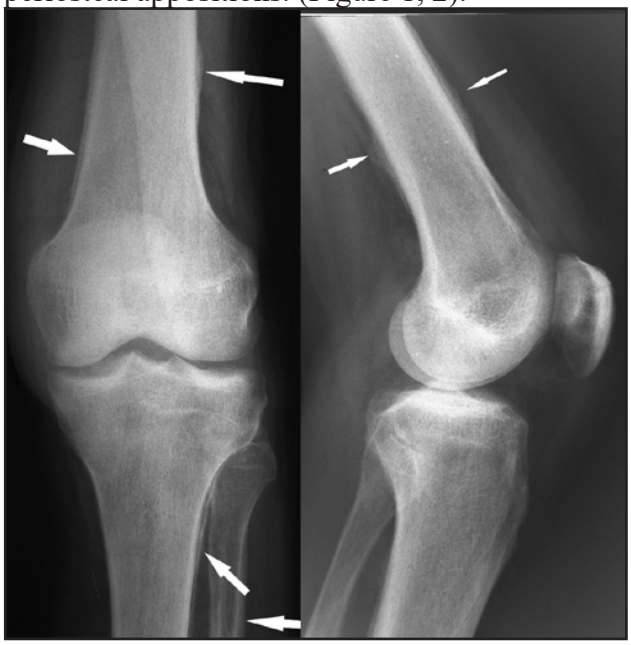

Figure 2 Conventional radiography; The image shows periosteal appositions on the tibia, fibula and femur (arrow)

Table 1. Laboratory findings of patient

Variable	Value	Variable	Value	Variable	Value
Hemoglobin	10.8g/dl	Glucose	78 mg/dl	CRP	12.9 mg/dl
Hematocrit	32,9%	AST	25 U/L	ANA	<1:80
White blood cells	5250/µL	ALT	28 U/L	RF	<16 U/L
Neutrophils	48%	BUN	23 mg/dl	Anti-CCP	negative
Monocytes	15.8%	Creatinine	0,8 mg/dl	Hbs-Ag	negative
Lymphocytes	33,4%	LAP	105 U/L	HCV-Ab	negative
Platelet	413000/µL	γ-GTP	28 U/L	Ferritin	120 µg/l
ESR	140mm/h	Total protein	7,2 mg/dl	HLA-B27	negative
		Serum calcium	9,6 mg/dl		
		Serum iron	36µg/dl		
		TIBC	360 µg/dl		
		Fibrinogen	548 mg/dl		
		Total cholesterol	124 mg/dl		
		Triglyceride	105 mg/dl		

ESR: Erythrocyte sedimentation rate; AST: aspartate transaminase; ALT: alanine transaminase; BUN: Blood urea nitrogen; LAP: serum alkaline phosphatase;TIBC: total iron-binding capacity CRP: C-reactive protein; ANA: antinuclear antibody; Hbs-Ag: hepatitis B surface antigen; HCV-Ab: hepatitis C virus antibody; RF: rheumatoid factor; anti-citrullinated protein antibodies; HLA-B27: human leukocyte antigen B27

X-rays of the sacroiliac joints were within normal limits.

Chest radiography showed a tumor in the lower lobe of the left lung.

Computed tomography confirmed a 64x48 mm lung tumor in the left lower lobe. (Figure 3).

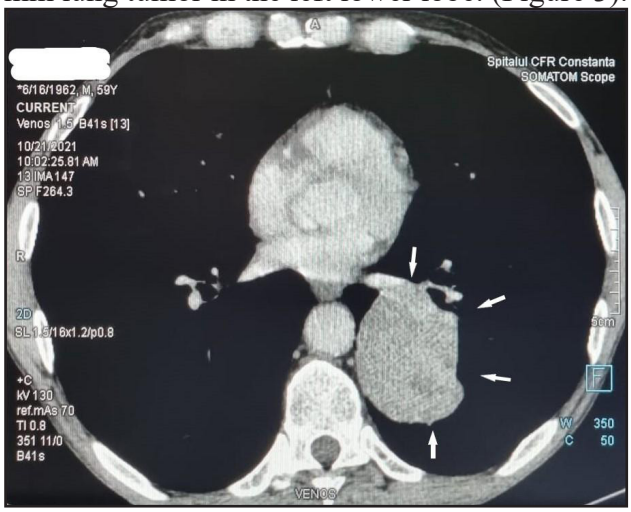

Figure 3. Computed tomography of the chest

The image revealed lung tumor in the left lower lobe.

Biopsy of the lung tumors were consistent with non-small cell lung cancer.

Discussions

The case presented by us is of a patient in whom OAH is the first manifestation of lung neoplasm. OAH precedes by 2 years the appearance of lung neoplasm, initially in the incomplete form represented by the Hippocratic fingers. Symmetrical arthritis completes the clinical picture of OAH 6 months after the appearance of the Hippocratic fingers.

Rheumatoid syndrome in HOA is manifested by symmetrical joint pain and swelling (including synovitis) in the metacarpal joints, wrists, elbows, knees, and ankles. (4, 5)

The most common OAH can mimic rheumatoid arthritis (6), but there have also been cases of OAH simulating reactive arthritis (7). In our case, joint effusion was considered secondary to meniscus tears and the patient underwent bilateral partial meniscectomy.

In the diagnostic approach of symmetrical arthritis of the presented case, we started from the presence of the Hippocratic fingers whose presence increased the index of suspicion for OAH. The overlooking of the Hippocratic fingers in this patient delayed the diagnosis of OAH and lung neoplasm by 2 years.

Conclusions

The index of suspicion for OAH should be high in a patient with symmetrical arthritis who associates Hippocratic fingers. Hippocratic fingers should be seen as incomplete OAH.

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