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Case report

Musculoskeletal ultrasound findings in paracoccidioidomycosis



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ABSTRACT

Paracoccidioidomycosis is a fungal infection endemic to South America. The infection is usually asymptomatic and mostly affects the upper and lower respiratory tracts with clinical-radiological dissociation. Joint involvement is rare with no specific pattern or radiological injury. We report a case of paracoccidioidomycosis in which the patient's initial symptoms were hoarseness and arthritis. After an ultrasound examination, we performed the differential diagnosis of other noninfectious arthropathies and analysis of the material collected, which revealed infection with the fungus *Paracoccidioides brasiliensis*.

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Achados ultrassonográficos osteomusculares na paracoccidioidomicose

RESUMO

A paracoccidioidomicose é uma infecção fúngica endêmica na América do Sul. A infecção geralmente é assintomática e afeta principalmente os tratos respiratórios superior e inferior, com dissociação clínico-radiológica. O envolvimento articular é raro, sem um padrão ou lesão radiológica específica. Apresenta-se um relato de caso de paracoccidioidomicose em que os sintomas iniciais do paciente foram rouquidão e artrite. Depois de um exame de ultrassonografia, foram feitos o diagnóstico diferencial de outras artropatias não infecciosas e a análise do material coletado, que revelou infecção pelo fungo *Paracoccidioides brasiliensis*.

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Palavras-chave:

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Introduction

Paracoccidioidomycosis is a fungal infection endemic to South America caused by the thermo dimorphic fungus *Paracoccidioides* sp.¹ The fungus has a spatially heterogeneous distribution, with areas of low and high endemicity, and the disease is acquired by airborne inhalation or via lesions in skin and mucosa. The infection is usually asymptomatic and mostly affects the upper and lower respiratory tracts with clinic-radiological dissociation. Even though rare, several extra pulmonary manifestations have been reported in the genitalia, gastrointestinal tract, intraspinal region, and central nervous system, and the association between paracoccidioidomycosis and cancer and HIV has been suggested. Joint involvement is rare with no specific pattern or radiological injury.²

We report a case of paracoccidioidomycosis in which the patient's initial symptoms were hoarseness and oligoarthritis. An ultrasound (US) was performed as an extension of the physical examination for possible differential diagnosis of other diseases that may produce similar joint changes. Articular manifestations of paracoccidioidomycosis include carpal tunnel syndrome, association with gouty arthritis in the proximal phalanx of the hallux, and pyoarthritides even in the absence of immunosuppression risk factors.^{3,4}

Osteoarticular involvement in paracoccidioidomycosis is variable, with 2.2-4% of bones and joints, and in the acute/subacute form of the disease it accounted for 20-26.4% of paracoccidioidomycosis cases.^{5,6} Skin involvement presents histologically as papillomatosis, with epidermal proliferation and formation of microabscesses.⁷

Interestingly, in this clinical case we performed guided ultrasound to collect articular material, which resulted in a more accurate diagnosis and detection of previously unreported ecotextural changes and cutaneous manifestations such as microabscesses.

Case report

The patient was a 55-year-old man, resident in the rural area, state of São Paulo, Brazil with a six-month history of joint pain.

He presented with asymmetric inflammatory pain in the left wrist and in the fingers, mostly in the 1st right distal interphalangeal (DIP) and 3rd proximal interphalangeal (PIP) joints, associated with hoarseness, which started at the same time as the other symptoms. In addition, he reported losing 3 kg since the onset of symptoms. The patient denied fever or contact with people with contagious diseases.

On physical examination, he had hoarseness, increased volume and temperature on palpation, in addition to hyperemia in the palm and thenar eminence of the left wrist and 1st right distal interphalangeal joint.

As a regular procedure in our practice, we performed a musculoskeletal ultrasound (MSUS) as an extension of the physical examination, which showed hypoechoic, heterogeneous collection in subcutaneous planes, extending to the flexor tendons of the left wrist and first right DIP, characterizing tenosynovitis and synovitis in dorsal recess of the 1st right DIP and 3rd right metacarpophalangeal (MCP) joints, with important inflammatory activity, shown by the presence of intense power Doppler signal (PD) (Figs. 1 and 2).

We performed an US-guided puncture of the collection and sent the material to the laboratory for bacilli tests, fungal and bacterial cultures, and direct mycological examination. The results were returned quickly, and direct mycological examination was positive for *Paracoccidioides brasiliensis*. Serologic tests for *Paracoccidioides* spp. were not realized and blood and wrist secretion cultures were negative for *Mycobacterium* spp. and fungi.

On further investigation, laryngoscopy revealed glottic cleft, chest radiograph thick reticular pattern affecting both lungs, chest computed tomography (CT) scan with cavitations (Fig. 3). The patient refused HIV testing.

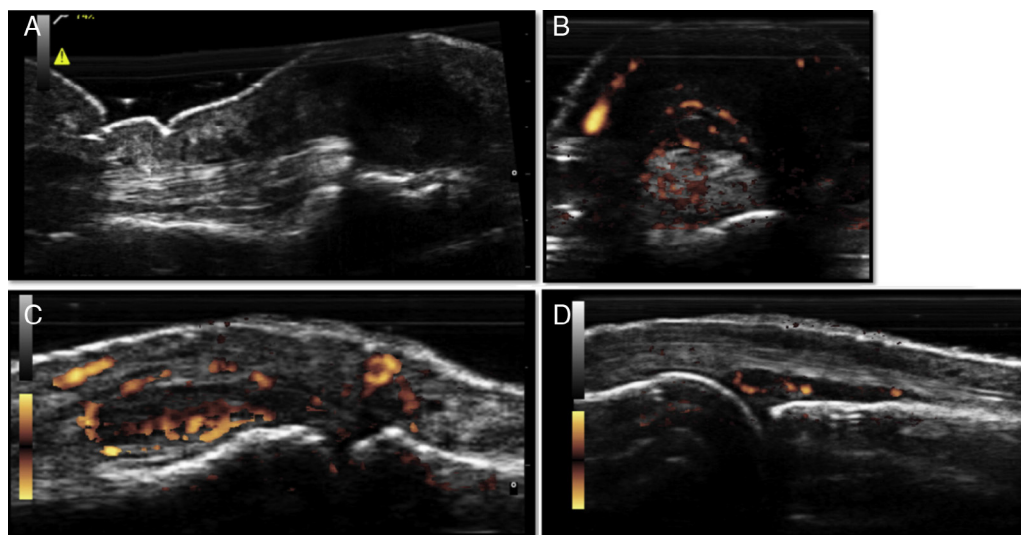


Fig. 1 – (A). Longitudinal US image of the palmar recess of the 1st right interphalangeal (DIP) joint, showing subcutaneous hypoechoic collection involving the flexor digitorum profundus tendon and (B) transverse scan with positive PD signal. US image showing dorsal recess synovitis with positive PD signal of (C) 1st right interphalangeal (DIP) and (D) 3rd right metacarpophalangeal (MCP) joints.

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