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Caso Clínico

Clinical Case

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**Sífilis secundária com comprometimento pulmonar:
Relato de um caso com ênfase nos achados de
tomografia computadorizada e ressonância magnética**

***Secondary syphilis with pulmonary involvement:
Report of a case with emphasis to the high-resolution CT
and magnetic resonance findings***

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Resumo

Doente do sexo masculino, 37 anos, apresentando-se com dor torácica e febre. O exame físico mostrou lesões de pele, avermelhadas. Foi investigado com radiografias do tórax, tomografia computadorizada e ressonância magnética do tórax, que revelaram múltiplos nódulos, grandes e pequenos, com distribuição randômica, predominando nas regiões inferiores dos pulmões. Biópsias do pulmão e de lesão de pele foram realizadas e o diagnóstico de sífilis secundária foi defi-

Abstract

A 37-year-old man presented with thoracic pain and fever. The physical examination showed reddish skin lesions. He was investigated with radiography, high-resolution computed tomography and magnetic resonance of the chest, which revealed multiple small and large nodules with random distribution, mostly in the lower lungs zones. Biopsies of lung and skin lesions was performed and the diagnosis of secondary syphilis was defined. Other laboratories tests (venereal di-

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SÍFILIS SECUNDÁRIA COM COMPROMETIMENTO PULMONAR: RELATO DE UM CASO COM ÊNFASE NOS ACHADOS DE TOMOGRAFIA COMPUTADORIZADA E RESSONÂNCIA MAGNÉTICA

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nido. Outros testes laboratoriais (VDRL e FtA-abs) confirmaram o diagnóstico. O doente foi tratado com penicilina, e as lesões pulmonares e de pele regrediram nos exames de controle.

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Palavras-chave: Sífilis pulmonar, tomografia computadorizada de alta resolução, ressonância magnética.

sease laboratory and FtA-abs) corroborated the diagnosis. The patient was treated with penicillin, and the pulmonary and skin lesions regressed in the follow-up examinations.

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Key-word: Pulmonary syphilis, high-resolution CT, magnetic resonance imaging.

Introduction

Acquired secondary syphilis is a rare condition in nowadays because of the antibiotics of large spectrum¹. Pulmonary involvement is even rarer². Biro *et al.*³ screened 1500 patients between 1939 and 1944 and they didn't find radiographic alterations compatible with pulmonary syphilis. However, the re-emergence of the venereal disease associated with the human immunodeficiency virus (HIV) infection may be responsible by the increase of the incidence of this infection¹.

Only a few authors have described the imaging features in patients with secondary pulmonary syphilis³⁻⁹. The most common demonstrated high-resolution CT in these cases includes solitary pulmonary nodules, mainly in the middle and lower lungs zones, multiple pulmonary nodules and reticulonodular pattern^{3,5,6,9}. To our knowledge there are no reports of correlation between the high-resolution CT and magnetic resonance (MR) aspects of this pulmonary infection.

The authors aim to present a case of secondary syphilis with pulmonary involvement, emphasizing the CT and MR findings of this rare infection.

Case report

A 37-year-old male patient presented with a two-week history of thoracic pain. Also, five days before the presentation he noted reddish skin lesions and fever. At physical examination he was dehydrate, with multiple palpable and painful lymph nodes. The skin inspection showed several reddish annular scaling plaque-like lesions on thorax, upper extremities, face and soles of feet, with 2 to 4 cm. The pulmonary auscultation revealed reduced vesicular murmurs, associated to sibilus and crackles on the bases. Blood exam were normal, serological tests for HIV and BAAR/fungus negative. Venereal disease research laboratory (VDRL) test was positive in dilutions 1/1024 and FtA-abs reagent. Chest radiographs showed a peripheral round opacity and several small nodules on the left pulmonary base. The high-resolution CT (1-mm collimation and 10-mm interval) scan revealed multiple pulmonary nodules with random distribution, mostly in the lower lungs zones. The larger nodule has two-centimeter of diameter, was pleural based, and showed central necrosis characterized by lower attenuation inner area before and after contrast ad-

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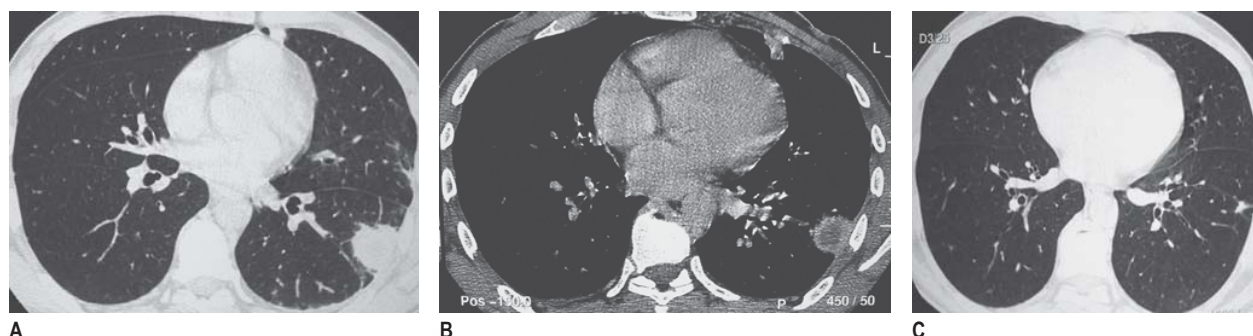


Fig. 1 – A) High-resolution CT shows a large nodule in the left inferior lobe and reticular opacities in the left upper lobe. **B)** Mediastinal window demonstrates the central hypodense area in the nodule, which could represent necrosis. **C)** Follow-up high-resolution CT at the same level demonstrating regression of the previous findings

ministration (Fig 1). A MR image of the thorax was performed on a 1.5 T system (Gyrosan ACS NT, Philips Medical Systems, Best, Netherlands) and showed nodules with low signal on T1 and high signal on T2-weighted images. The central necrosis of the larger nodule was also hypointense on T1 and hyperintense on T2-weighted images, and showed no enhancement after contrast administration (Fig 2). A open lung biopsy was performed and demonstrated a peribronchovascular infiltrate, and alveolar spaces filled by plasmocytes and histio-

cytes, without necrosis. Tendency of granulomas formation was seen. Biopsy of a skin lesion shows the same pattern. These findings confirmed the diagnosis of secondary syphilis. The patient was treated with penicillin G 2,400,000 IU two times per week during two weeks. Also, to avoid Jarisch-Herxheimer reaction, prednisone was added to the treatment. Eight weeks after the treatment there was complete regression of the skin lesions, and the chest radiographs and high-resolution CT were normal.

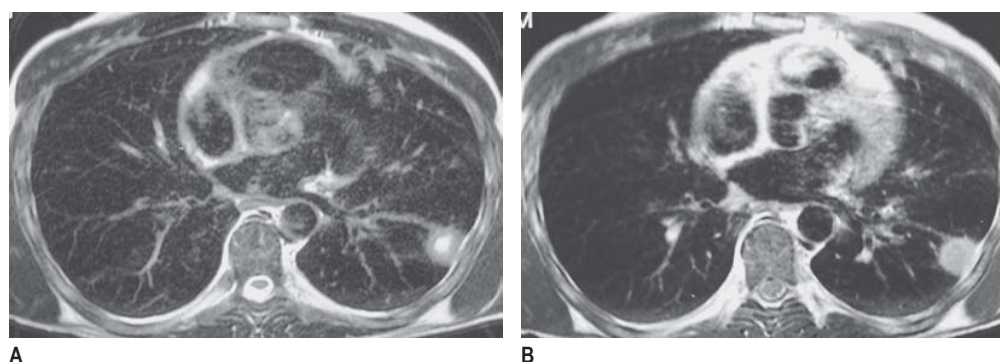


Fig. 2 – A) Axial T2-weighted image and **B)** axial T1-weighted image after administration show a large nodule at the left lung with central necrosis. This area of necrosis has high signal on T2-weighted images without enhancement after contrast administration

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Discussion

The most common presentation of secondary syphilis is multiple reddish annular scaling plaque-like skin lesions, lymph nodes enlargement, mucosal plaques, fever and condyloma lata. Pulmonary disease is extremely rare². Coleman *et al.*¹⁰ proposed five criteria for the definitive diagnosis of secondary pulmonary syphilis. These criteria are: 1) history and physical examination findings of secondary syphilis; 2) serologic tests positive for syphilis; 3) pulmonary abnormalities seen radiographically, with or without associated pulmonary symptoms or signs; 4) exclusion of other forms of pulmonary disease; 5) therapeutic response of radiological findings to anti-syphilitic therapy. Our case presented all the criteria suggested by Coleman *et al.*, defining the diagnosis of secondary syphilis.

To our knowledge, there were published only eight cases of secondary syphilis, which are in agreement with Coleman's criteria. The most common presentation of these cases were solitary pulmonary nodules in four patients, mainly in the middle and lower lungs zones^{5,6,8,9} multiple pulmonary nodules in two cases³, reticulonodular pattern in the bases of one patient⁷ and lingular and right lower lobe infiltrate¹⁰. In our case, the high-resolution CT scan and the MR of the chest showed multiple bibasilar pulmonary nodules with random distribution and soft tissue attenuation, sizing between 5 and 20 mm. The largest nodule was pleural based and showed central necrosis, characterized by lower attenuation area on CT and hyperintensity on T2 weight images on MR. Post contrast images showed homogeneous enhancement in all nodules, except in the central area of the largest lesion. Concerning the imaging findings in patients with tertiary syphilis, bilateral hilar lymph node enlargement, interstitial disease with evolution to diffuse pulmonary fibrosis if not treated,

bronchiectasis, miliary nodules and masses are most frequently reported^{4,11}. Jankovic *et al.*¹¹ describe a radiological pattern similar to sarcoidosis and other diseases (coal worker's disease, silicosis, idiopathic pulmonary fibrosis and hypersensitivity pneumonitis).

In summary, although rare, syphilis is a systemic disease that still may be seen nowadays. The high-resolution CT scan of patients with pulmonary secondary syphilis may demonstrate random nodules ranging between 5 and 20 mm, with the largest nodules demonstrating central areas of low attenuation. The presence of the characteristic skin lesions may also help the diagnosis and the early institution of the treatment, avoiding the evolution of the infection to tertiary syphilis, a much more severe form of the disease.

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