Disseminated nocardia infection mimicking malignancy on FDG PET/CT

Infección diseminada por nocardia imitando malignidad en FDG PET/CT

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A 39-year-old male patient was admitted to our hospital with recurrent fever and coughing up purulent sputum for two months. The symptoms were suppressed by a course of 14-day antibiotherapy (ampicillin sulbactam and clarithromycin) but relapsed after he stopped using antibiotics. The patient’s past medical history included immunosuppressive therapy for Neuro-Behçet’s disease 2 months ago. Laboratory work-up showed increased white blood cell count [20 × 10⁹ L⁻¹ (N: 4–11 × 10⁹ L⁻¹)], C-reactive protein (CRP) concentration [128 mg/L (N: <3 mg/L)] and erythrocyte sedimentation rate (ESR) [44 mm/h (N: <5 mm/h)]. Thorax computed tomography (CT) revealed a mass in the apical segment of the upper lobe of the right lung and multiple parenchymal nodules in both lungs (not shown). Infection and malignancy were included in the differential diagnosis. An initial diagnosis of pulmonary infection was made. Since the lesions did not disappear on the follow-up CT after antibiotherapy (not shown), FDG PET/CT was requested to exclude malignancy. It showed intense hypermetabolic pleural based mass in the right upper lobe (SUVmax = 12) and multiple nodules in both lungs (SUVmax = 6.5) (Fig. 1). Moderate-intense hypermetabolic (SUVmax = 10.7) soft-tissue lesions were also detected in the muscles and subcutaneous tissue (Fig. 1). Moreover, non-specific increased FDG uptake was observed in the spleen (SUVmax = 4.0) (Fig. 1). The mass in the right lung and soft-tissue lesion in the right gluteal muscle were biopsied and cultured. The results were reported as nocardia infection. Nocardiosis is a rare but severe pyogenic infection that is most

Fig. 1. FDG PET/CT images showed intense hypermetabolic mass lesion in the right upper lobe (3.5 × 2 cm) (SUVmax: 12.0) (A: Maximum intensity projection (MIP) image, B: axial PET, CT and fusion PET/CT images), multiple moderate-intense hypermetabolic parenchymal nodules in both lungs (SUVmax: 6.5) (A, C) and moderate-intense hypermetabolic multiple soft-tissue lesions (SUVmax: 10.7) in the right teres minor, bilateral gluteus medius, right erector spinae, left trapezius, right quadriceps femoris, right adductor magnus, left adductor longus muscles and subcutaneous tissue (A, D).

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commonly found in immunocompromised patients.\(^1\) Pulmonary disease is the most common presentation and approximately one-third of such patients have a disseminated disease at the time of diagnosis.\(^2\) The identification of nocardial infection is clinically challenging because it is often indistinguishable from other infections and malignancy. Although FDG uptake in cerebral and pulmonary nocardia infection were presented before, disseminated nocardiosis mimicking malignancy has not been reported yet.\(^3\) Nocardiosis should be kept in mind while reporting FDG PET/CT studies of immunocompromised patients since it may produce lesions suggestive for malignancy. Additionally, biopsy should be recommended for suspicious lesions. FDG PET/CT may have a role in defining the biopsy location as this was the case in our patient.

**Conflict of interest**

All the authors state that there were no conflicts of interests when the manuscript was written.

**References**