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PET-CT findings in arteritis

Achados de PET-CT na arterite

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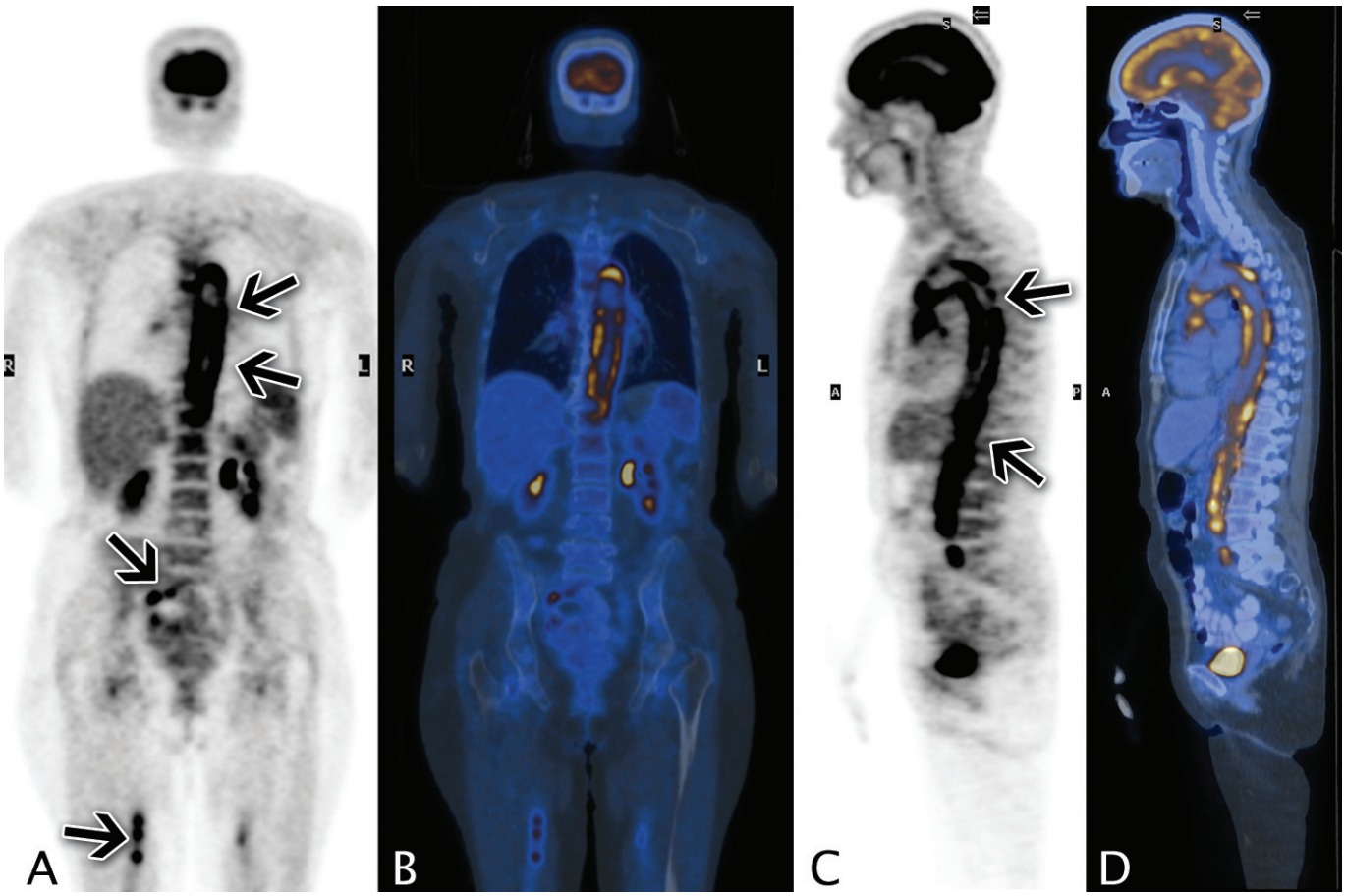

Coronal (A) and sagittal (C) FDG PET images and the corresponding coronal (B) and sagittal (D) PET-CT fusion images demonstrate markedly increased glucose metabolism along the walls of the aorta and its main branches. This pattern of FDG uptake strongly suggests arteritis.

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Received on Nov 30, 2009 – Accepted on Apr 12, 2010

A 69-year-old Caucasian female was referred to the Imaging Department for investigation of fever of unknown origin (FUO), fatigue for seven months, and recent onset of atypical chest pain. Laboratory tests revealed elevation of serum C-reactive protein levels and erythrocyte sedimentation rate.

Positron emission tomography with computed tomography fusion (PET-CT) with F18-fluorodeoxyglucose (FDG) was performed for the evaluation of FUO by excluding malignancy. The FDG images revealed markedly diffuse and circumferential increased uptake suggesting diffuse inflammatory process along the walls of the aorta and subclavian arteries.

The correlation of clinical evaluation, laboratory tests and PET-CT findings resulted in the diagnosis of arteritis. The patient improved her symptoms after administration of prednisolone at a dose of 60 mg/day for three weeks.

Arteritis is characterized by inflammatory process of the artery wall, more frequently involving the aorta and its main branches. It commonly presents as a slowly progressive disease and the most frequent clinical presentation is fatigue and fever. When chronic, the deposition of lymphocytes and other inflammatory cells on the artery wall leads to thickening, stenosis and occlusion of these vessels. The diffuse form involving the walls of the aorta and its major branches is the most common feature and occurs in approximately 70% of patients with large vessel arteritis[1].

The diagnosis relies on clinical presentation, laboratory and morphologic imaging findings, namely Doppler ultrasonography, contrast-enhanced CT and magnetic resonance imaging[2].

It is well known that neoplastic and inflammatory tissues present augmented glucose metabolic rates. The role of FDG PET-CT scan is established in assessing many malignant tumors as well as for investigation of FUO. Besides that, there are increasing data demonstrating the usefulness of FDG PET-CT; hence, it should be considered an important noninvasive tool in diagnosis of large vessel arteritis[3].

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