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Incidental detection of probable meningioma in brain scintigraphy using ^{99m}Tc-TRODAT-1

Detecção acidental de provável meningioma na cintilografia cerebral utilizando ^{99m}Tc-TRODAT-1

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An 84-year-old woman underwent a dopamine transporter (DAT) study to investigate a non-levodopa-responsive parkinsonism. A SPECT brain scan was conducted four hours after intravenous administration of 1110 MBq (megabecquerels) equivalent to 30 mCi (millicuries) of ^{99m}Tc–TRODAT-1. The study revealed a significant uptake deficit of radiopharmaceuticals in the striatum. The semi-quantitative analysis of density of DAT showed radiopharmaceutical uptake indexes of 0.40 and 0.55 in the right and left side of the striatum, respectively. In addition, the right:left ratio was 0.73. As well, scintigraphy images showed intense uptake of the radiopharmaceutical in the extra-axial left frontal lobe consistent with meningioma in a subsequent magnetic resonance imaging (MRI) study (Figure). The anatomical MRI sequences showed an intensely enhancing extra-axial mass in the left frontal lobe measuring about 2.8 x 4.1 x 4.1 cm with a broad dural base and heterogeneous

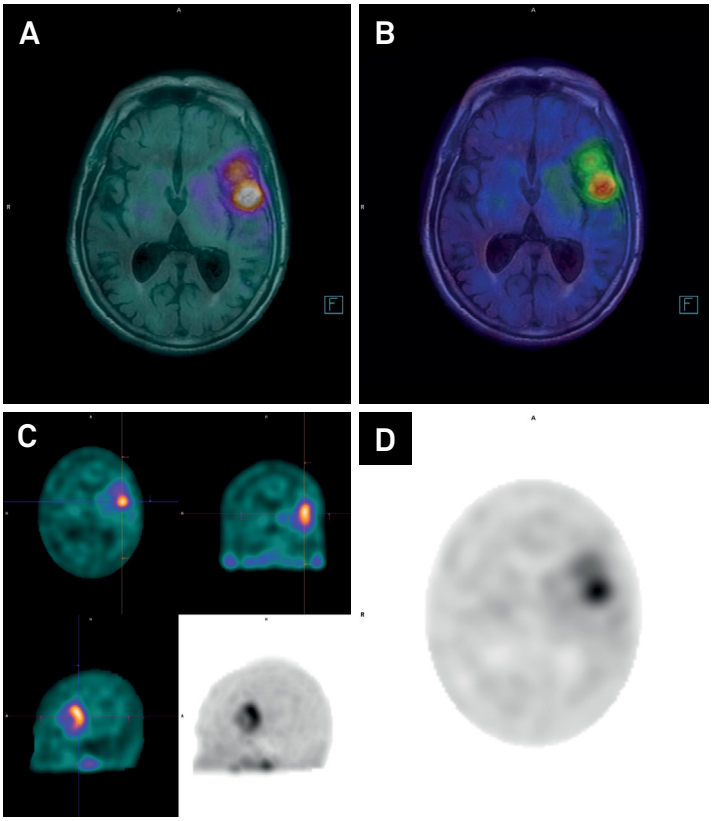

Figure. Dopamine transporter (DAT) imaging with SPECT/CT was performed four hours after IV injection of 1110 MBq (30 mCi) of ^{99m}Tc-TRODAT-1. Fused SPECT/MRI axial slices (A and B) and SPECT (C and D). The study revealed significant reduction of radiotracer uptake in the striatum bilaterally. As well, a remarkable uptake of the radiopharmaceutical can be seen in the tumoral left frontal extra-axial mass. SPECT: single-photon emission computed tomography; MRI: magnetic resonance imaging; CT: computed tomography.

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signal intensity on T2-weighted images and a large area of edema surrounding the lesion.

Brain tumors are a rare cause of parkinsonism[1] and of them, meningiomas are the leading ones. In our patient, the tumor had neither signs of compression nor an expansive effect that could justify dopaminergic pathway compromise. In fact, the majority of brain tumors found in patients with parkinsonism are incidental[2,3,4,5], and surgery was not recommended in our patient.

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