Interesting images

Utility of the PET-CT Scan with $^{18}$F-FDG in a Case of Choroid Melanoma Recurrence

Utilidad de la PET-TC con $^{18}$F-FDG en un caso de recidiva del melanoma de coroides


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A R T I C L E  I N F O

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In July 2011, an 85-year-old male with a history of choroid melanoma of the right eye of 12 mm and a negative extension study (T2N0M0), treated with enucleation in 2003 and free of disease on posterior controls, presented asthenia, cough and hemoptisis for which he underwent complementary examinations. Ultrasonography showed an intrahepatic lesion. Thoracoabdominal CT and MR discovered a single metastatic lesion. FNA was performed, being cyto/immunohistochemically positive for metastasis of choroid melanoma (S-100+, MELAN-CO+, HMB45+, Ki-67 10%). We performed PET-CT with $^{18}$F-FDG to complete the extension study. The PET images showed a hypermetabolic lesion coinciding with a denser zone in the posterior part of the right ocular fossa which was persistent in the late PET image suggesting local recurrence. Two lesions with elevated metabolic activity were observed in the whole body scan coinciding with a right supraclavicular lymph node and the already known hepatic lesion, being interpreted as two distant metastases (Figs. 1–3). Choroid melanoma is the most frequent ocular tumor in adulthood, representing 5% of all melanomas and having a slow and silent growth. Small tumors are treated conservatively (transpupilar thermotherapy, brachytherapy and external radiotherapy with helium proton bundle while the remaining tumors undergo evisceration, enucleation and exenteration. In our patient enucleation was carried out with elimination of the whole ocular globe and part of the optic nerve, preserving the conjunctiva, Tenon’s capsule and extraocular muscles. In contrast with the remaining melanomas, that of the choroid is disseminated hematogenously, preferentially to the liver (99%). In 55% of the cases there is a single metastasis which is rarely associated with lymph node infiltration. This behavior requires the inclusion of both a study of the primary lesion as well as imaging studies (US/CT/MR) in the diagnosis and follow up with the aim of ruling out hepatic involvement. Despite the limited survival associated with the presence of hepatic metastasis, if the lesion is single, resection or other procedures (radiofrequency, transcutaneous ethanol injection, hepatic artery chemoembolization with cytostatics, radioembolization with crystal or resin-90Ytrio microspheres) may be performed. The didactic component of our case is to demonstrate the utility of

Fig. 1. Selective image of the ocular region. The patient was instructed to avoid ocular movements during the phase of tracer incorporation. A deposit of $^{18}$F-FDG (SUVmax 5.7) is observed in the posterior part of the right ocular fossa which appears to be thickened and is compatible with recurrence of choroid melanoma.
Fig. 2. Whole-body scan from the cranial calotte to the middle third of the thighs after the administration of $^{18}$F-FDG while resting. An 8 mm lymph node can be seen in the right supraclavicular fossa with metabolic activity (SUVmax 2.9) which was confirmed to be a metastatic lesion by cytology.

Fig. 3. Hypermetabolic lesion (SUVmax 9.6) in segment IV of the right hepatic lobe which was slightly hypodense in the arterial phase and with peripheral contrast uptake in the portal phase compatible with a single metastasis.

whole body PET-CT in a patient with metastatic disease due to choroid melanoma since, in addition to confirming the hepatic metastasis (M1), PET-CT detected the presence of an unknown right supraclavicular lymph node with uptake of $^{18}$F-FDG which was confirmed to be lymph node recurrence by US + FNA. The presence of a second metastatic infiltration contraindicated radical treatment aimed at the hepatic metastasis. The anecdotic component of our case is that PET detected metabolic changes in the right ocular fossa which were highly suggestive of also unknown local recurrence. Histological confirmation was not obtained since an invasive diagnostic procedure which did not have therapeutic implications was not considered.

References