THE ROLE OF PET/CT IN DETECTING OCCULT DISEASE IN SYNCHRONOUS TUMORS: A CASE REPORT OF MERKEL CELL CARCINOMA AND NON-HODGKIN LYMPHOMA

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Introduction/Justification: Merkel Cell Carcinoma (MCC) is a rare and aggressive cutaneous neoplasm characterized by a high tendency for recurrence and metastasis, primarily affecting older adults with fair skin. The introduction of PET/CT with 18F-FDG has significantly enhanced the diagnosis and management of MCC, providing superior sensitivity in detecting occult disease compared to computed tomography. This advancement profoundly impacts patient staging and therapeutic decisions. Similarly, non-Hodgkin lymphomas, a heterogeneous group of neoplasms originating from B cells, T cells, or natural killer cells, also benefit from PET/CT for diagnosis and follow-up, underscoring the significance of this modality in oncological practice. Herein, we present a rare case of synchronous Merkel cell carcinoma and non-Hodgkin lymphoma. **Report:** A 61-year-old male patient with a history of treated diffuse large B-cell lymphoma and multiple comorbidities presented with symptoms of progressive asthenia, night sweats without fever, weight loss, and a nodular reddish lesion on the left thigh; no palpable lymph nodes were found. Initial blood work showed pancytopenia; bone marrow biopsy did not reveal infiltration by high-grade histological non-Hodgkin lymphoma, but could not rule out focal infiltration by a low-grade histological lymphoma of immunophenotype B. Further investigation included a skin nodule biopsy, histopathologically consistent with Merkel cell carcinoma. PET/CT revealed extensive neoplastic involvement, including a retroperitoneal mass, neoplastic involvement of multiple bilateral lymph node chains, diffuse hyperdensities throughout the body, and a pulmonary nodule. Biopsy of the retroperitoneal mass confirmed low-grade non-Hodgkin lymphoma, suggesting a follicular subtype. The patient underwent resection of the Merkel cell carcinoma lesion in his thigh. A compromised deep margin was detected, warranting adjuvant radiotherapy and adjuvant chemotherapy with cisplatin + etoposide, administered concurrently with rituximab for lymphoma treatment. **Conclusion:** This case underscores the complexity of diagnosing and treating synchronous neoplasms, emphasizing the need for a multidisciplinary and individualized approach. 18F-FDG-PET/CT plays a pivotal role in detecting occult disease and assessing the extent of the conditions in this setting.

Keywords: Merkel cell carcinoma, Non-Hodgkin lymphoma, Occult disease, PET/CT.

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BRAIN METABOLISM REDISTRIBUTION FROM NEOCORTEX TO PRIMITIVE BRAIN STRUCTURES IN A PATIENT WITH HODGKIN'S LYMPHOMA

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Introduction/Justification: We have recently demonstrated a 18F-FDG PET/CT image pattern of brain metabolic redistribution from the neocortex to evolutionary ancient brain structures during the acute phase of COVID-19 respiratory syndrome (1). We report here a patient with extensive lesions caused by Hodgkin's lymphoma whose PET/CT demonstrated changes in the cerebral distribution of FDG, with reduced uptake in the neocortex and a relative increase in the basal ganglia, similar to that observed in acute COVID-19 (1). **Report:** A 57-year-old female patient with a history of hypertension and hypothyroidism, presented with weight loss and generalized lymphadenopathy. Biopsy revealed nodular sclerosis classical Hodgkin's lymphoma subtype. 18F-FDG PET/CT was requested for staging. The images showed marked hypermetabolism in lymphadenopathy below and above the diaphragm, spleen, and bone marrow, consistent with lymphoma infiltration. Reduced radiotracer uptake was also observed in the cerebral neocortex and relatively increased uptake in the basal ganglia. Semiquantitative analysis of FDG uptake in multiple brain regions was conducted using dedicated software, and the standard deviation (SD) of brain uptake in each region was calculated compared to a normal database, using the whole brain as the reference region for normalization. Quantification revealed marked increased relative uptake in lenticular nuclei (13.7 SD), thalamus (4.6) and brainstem (3.7), and reduced uptake in the frontal, parietal, and temporal lobes (-3,9 to -0,1 SD). Before starting chemotherapy, the patient experienced weakness, multiple episodes of diarrhea, and decreased level of consciousness. She developed hemophagocytic syndrome, septic shock, and died