PET-CT Imaging in Cancer of Unknown Primary in a Patient with Cranial Metastatic Mass

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Abstract

F18 - Fluorodeoxyglucose (FDG) PET-CT have found widespread application area especially in oncological patients. In the present case, diagnosis of renal primary tumor detected on FDG PET– CT imaging performed for investigation of malignancy in a patient with cranial metastatic mass was presented.

Keywords: *renal mass, PET-CT, FDG.*

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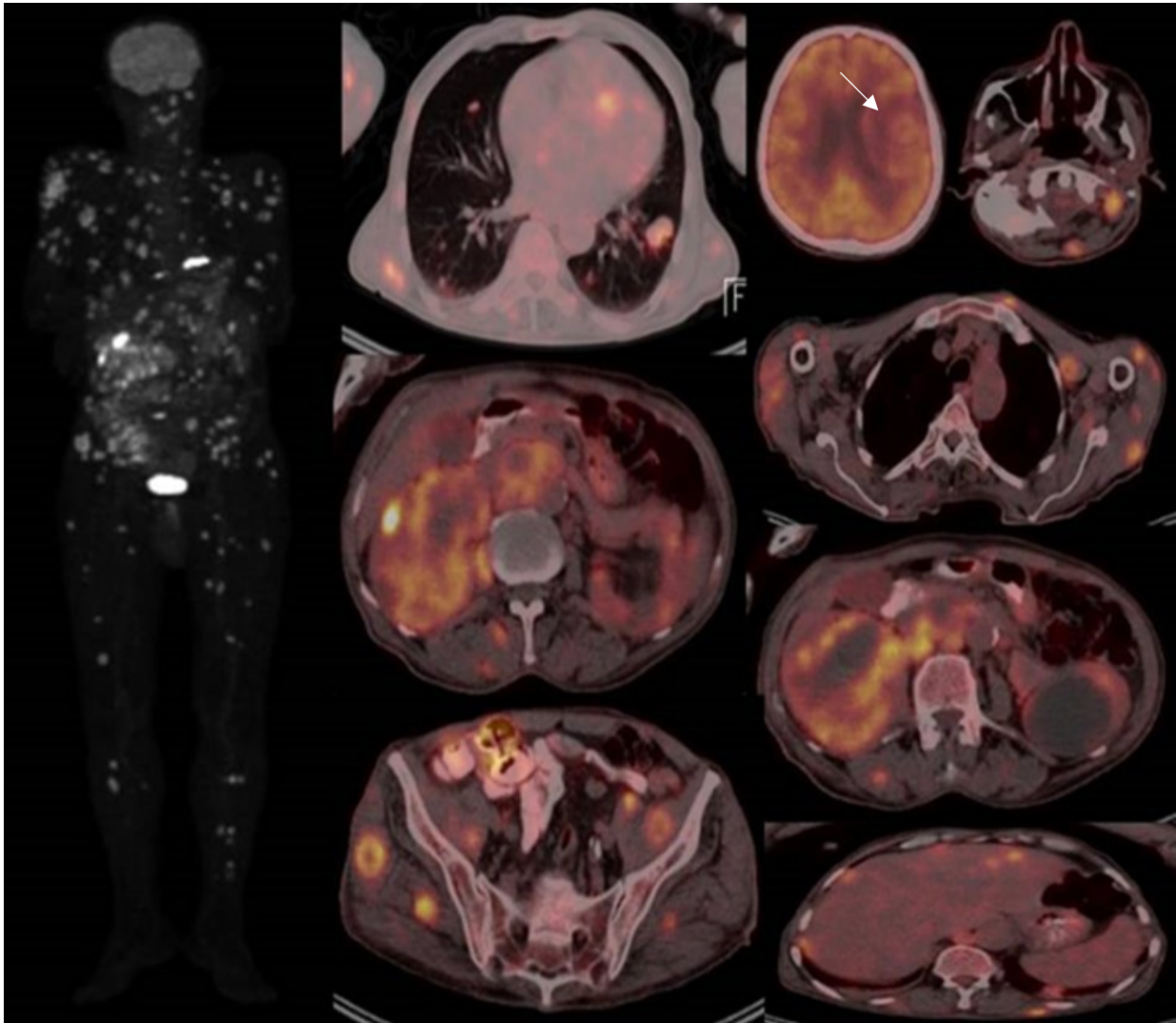
Figure 1.: Sixty seven-years-old male patient with left frontotemporal metastatic mass on magnetic resonance imaging (MRI) was referred to our department for PET-CT imaging on examination of underlying malignancy. Following fasting for 12 hours i.v. (intravascular) 8.6 mCi 18F-FDG was injected. Sixty minutes later images to be 2 minutes per bed in 3D mode were taken from the calvarium to the footpad. Images taken on Siemens Biograph mCT 20 PET-CT were evaluated after attenuation correction with low-dose CT. PET-CT imaging demonstrated left frontotemporal hypermetabolic mass (SUVmax: 6.42) approximately 2.5x2 cm and extensive hypometabolism due to edema around this lesion (white arrow). There were more than 20 metastatic subpleural and parenchymal nodules in both lung parenchyma, the largest of which is 2.5 cm in the left lung lower lobe basal (SUVmax: 6.51). Multiple metastatic lymphadenopathy in the mediastinum (SUVmax: 6-9) and abdomen (SUVmax: 9), metastatic liver lesions and multiple metastatic lesions in the muscles and bones of the axial and appendicular skeleton (SUVmax: 8-11) were detected. In addition, a possible primary malignancy was detected in the right kidney (SUVmax: 12) with a heterogeneous density of 11x7 cm. Biopsy of gluteal metastatic lesion confirmed the diagnosis of clear cell renal carcinoma. FDG PET-CT imaging is a standard whole body imaging modality with widespread use in the field of oncology. Additionally, one of the

most important usage of PET-CT is the unknown primary malignancies. In the present case, diagnosis of clear cell renal carcinoma is detected on FDG PET– CT imaging performed for investigation of malignancy in a patient with paraneoplastic syndrome and cranial mass was presented. Cancer of unknown primary (CUP), defined as the presence of histologically proven metastatic disease for which the site of origin cannot be identified at the time of diagnosis (despite comprehensive diagnostic workup), is one of the ten most frequent cancers (accounting for 3–5% of all malignancies) and is the fourth most common cause of cancer-related death (1, 2).

References

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