Overlooked Unusual Left Ventricle Metastases Detected On FDG-PET/CT

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A 63-year-old man with metastatic non-small cell lung cancer (NSCLC) and a history of implantable cardioverter defibrillator (ICD) placement underwent contrast enhanced CT (CECT) on a 16-slice GE CT scanner (GE Healthcare, Waukesha, USA) and FDG-positron emission tomography (PET)/CT on a 16-slice GE 690 PET/CT scanner (GE Healthcare) 29 days later for initial staging. FDG-PET/CT demonstrated widespread hypermetabolic soft tissue and osseous metastases (Picture a. Maximum Intensity Projection PET). An unusual left ventricle metastasis was overlooked on CECT (arrow, Picture b) and it was also not visualized on non-contrast CT (Picture c), but it was clearly identified on PET/CT (SUVmax 12.8, arrows, Picture d: PET, Picture e: fused PET/CT; also as a long arrow in Picture a).
Given the short time interval (29 days) between FDG PET/CT and CECT, the size of the metastatic lesion and its appearance on CT, the development of left ventricle metastasis was unlikely. Similarly, multiple hypermetabolic metastases in the liver (Picture h: PET, Picture i: fused PET/CT), and bone such as T10 vertebra (SUVmax 14.3, arrows, Picture l: PET, Picture m: fused PET/CT; and as a short arrow in Picture a) were not visualized on corresponding CT (Picture g and k) or CECT (Picture f and j).

The incidence of cardiac metastases ranges from 2.3-18.3% (1), with lung cancer being the most common primary malignancy (1). As recommended, FDG-PET/CT should therefore be the primary imaging modality in diagnosing and staging NSCLC (2).

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References

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