HHS Public Access

Author manuscript

Dig Liver Dis. Author manuscript; available in PMC 2017 February 01.

Published in final edited form as:

Dig Liver Dis. 2016 February ; 48(2): 213. doi:10.1016/j.dld.2015.08.002.

Liver and bone metastases from breast cancer: Eovist® magnetic resonance and diffusion weighted imaging, 18F-FDG positron emission/computed tomography

Fabrizio Chegai[a,b], **Serena Monti**[c], **Antonio Orlacchio**[a], and **Lorenzo Mannelli**[b,*]

[a]Department of Diagnostic and Molecular Imaging, Radiation Therapy and Interventional Radiology, University Hospital Tor Vergata, Rome, Italy

[b]Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA

[c]IRCCS SDN, Naples, Italy

A 31-year-old female with history of breast carcinoma presented for restaging. 18-Fluorine-fluorodeoxyglucose positron emission tomography (FDG-PET) scan revealed diffuse and heterogeneously increased liver FDG uptake (Fig. 1A and B, asterisks) with hypodense nodular liver on computed tomography (CT, Fig. 1C). FDG-PET also demonstrated focally increased uptake in a thoracic vertebra (Fig. 1A, arrows), without correlates on CT bone window (Fig. 1D), consistent with viable neoplastic tissue. Diffusion weighted imaging (DWI) showed diffuse infiltrative hepatic bilobar lesions with persistent high signal intensity on high b-value (Fig. 2A and B, asterisks) differentiating histopathological architecture of metastases from normal parenchyma. The vertebral lesion also demonstrated restricted diffusion (white arrows). Gadolinium ethoxybenzyl dimeglumine (Eovist®) magnetic resonance imaging (MRI) demonstrated mild perfusion differences between normal liver parenchyma and metastatic tissue in the arterial (Fig. 2C), portal (Fig. 2D), and late venous phases (Fig. 2E), as both tissues are perfused although differently. Portal, late venous phase and post-contrast-hepato-specific-phase MRI showed a subtle capsular retraction adjacent to some of the lesions with segmental volume loss and a pseudocirrhotic appearance. Pseudocirrhosis [1] is defined as a variety of hepatic contour changes that resemble cirrhosis. Eovist®, a hepatospecific contrast agent metabolized and excreted only from hepatocytes produces a sharp contrast between normal parenchyma and metastases (Fig. 2F, asterisks). 18F-FDG-PET, DWI, and Eovist®-MRI all demonstrated metastatic liver disease by exploiting metabolic differences between normal and neoplastic cells.

Reference

1. Jha P, Poder L, Wang ZJ, et al. Radiologic mimics of cirrhosis. American Journalof Roentgenology. 2010; 194:993–999. http://dx.doi.org/10.2214/AJR.09.3409.

*Corresponding author at: Department of Radiology, Memorial Sloan Kettering Cancer Center, 1275 York Avenue, C276, New York, NY 10065, USA. Tel.: +1 212 639 7293; fax: +1 212 794 4010. mannellilorenzo@yahoo.it (L. Mannelli).

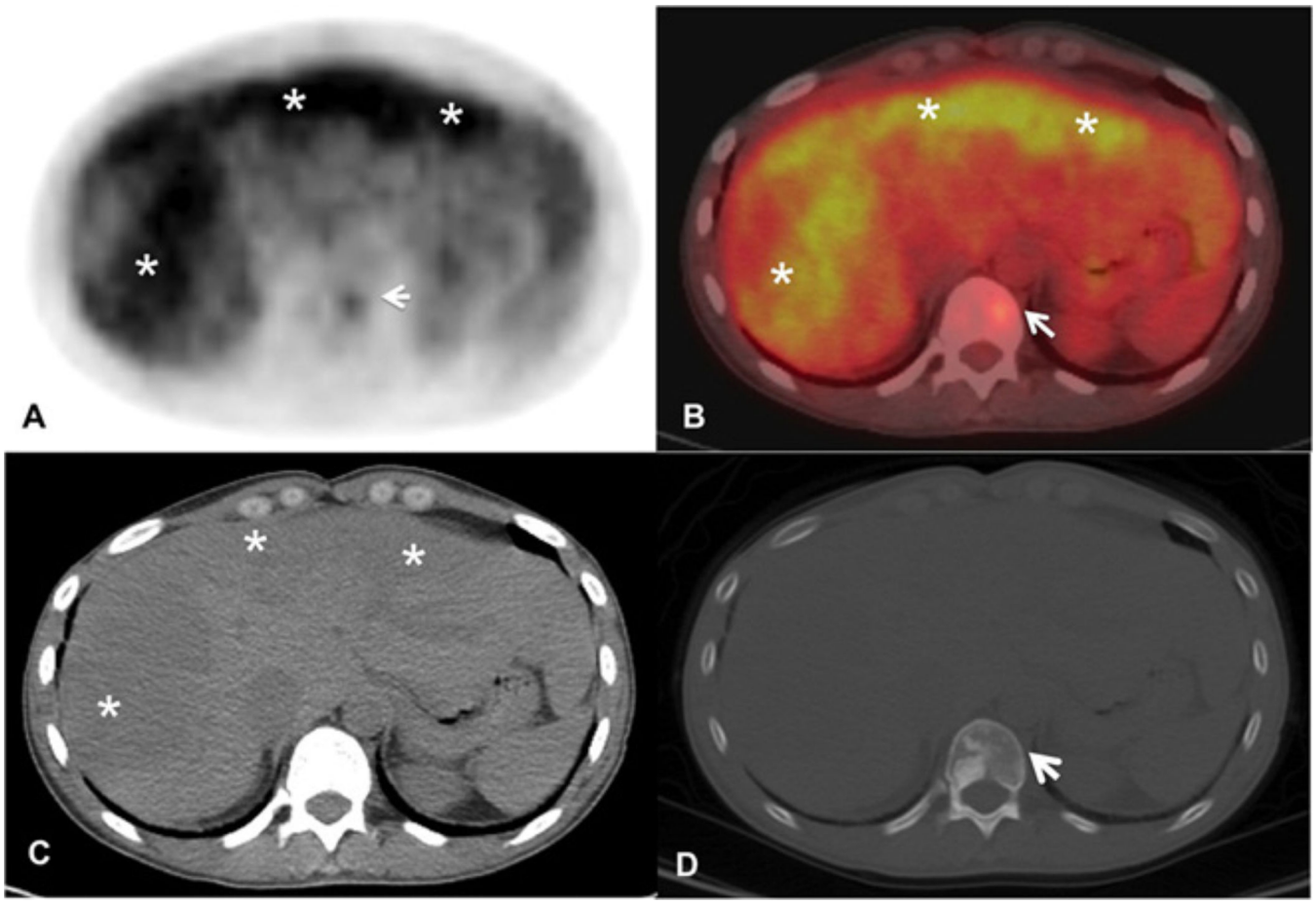

Fig. 1.

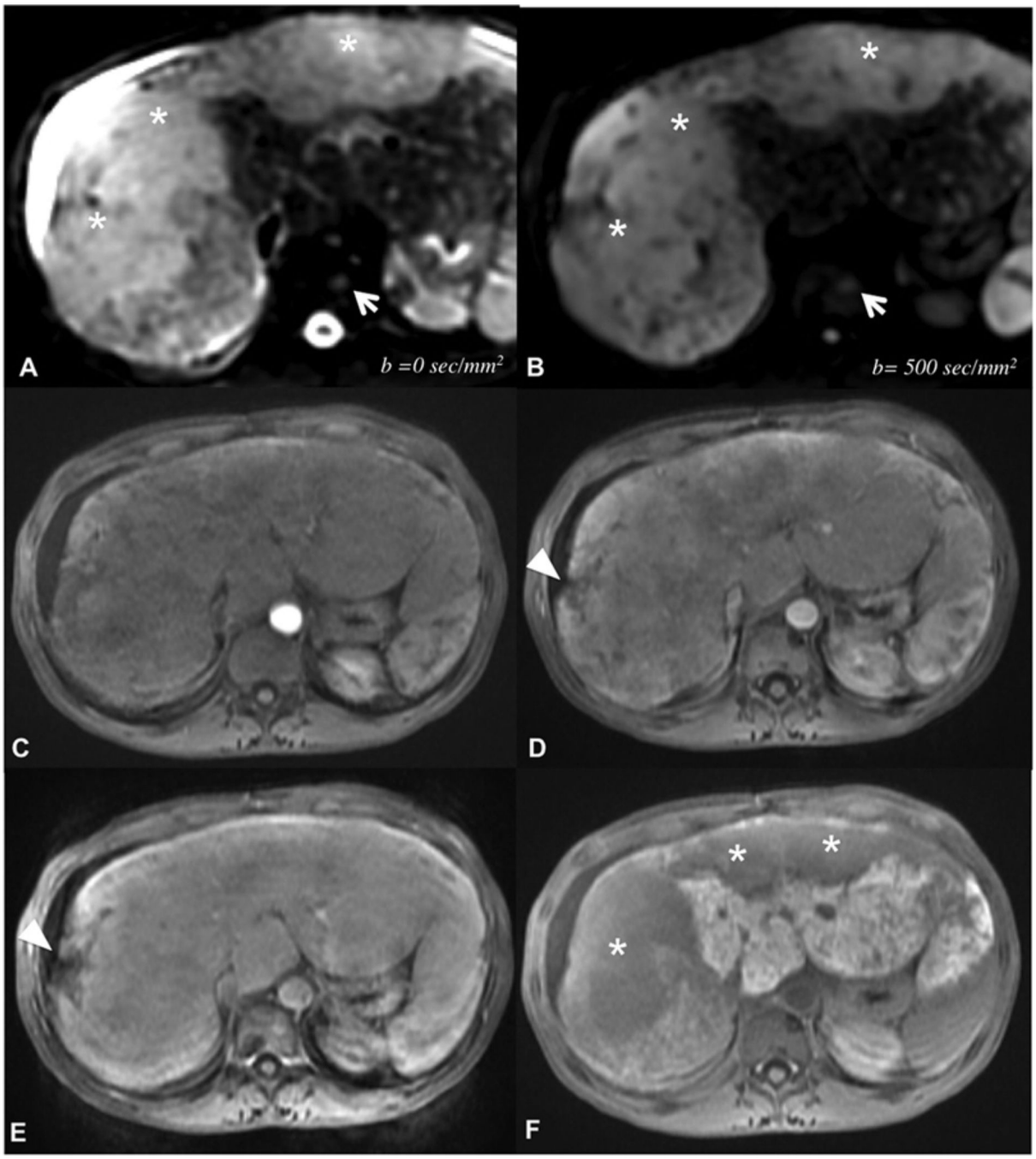

Fig. 2.