

Brain metastasis from breast cancer detected by ^{99m}Tc (V) DMSA SPET scintigraphy

To the Editor: In HJNM, we read the article of Zissimopoulos et al describing the use of pentavalent technetium-99m dimercaptosuccinic acid single photon emission tomography (^{99m}Tc (V)DMSA SPET) scintigraphy to effectively image osteosarcoma and its osseous metastases [1]. The uptake and washout of this radiopharmaceutical in breast cancer has been analysed by Papantoniou et al [2]. Based on the literature available to us, no information exists regarding the identification of small brain metastases in breast cancer patients by this tracer. Thus, we wish to underscore the efficacy of this method in such a case, contributing substantially to disease staging by presenting a 55 years old patient with primary invasive ductal carcinoma of the breast, who developed a solitary brain metastasis, 1.2cm in diameter, visualized by ^{99m}Tc (V)DMSA SPET brain scintigraphy. This lesion was first detected by computerized tomography (CT) performed because the patient was complaining for several neurological symptoms. On magnetic resonance spectroscopy (MRS), the abnormal brain focus was demonstrated by changes of metabolites characteristic for metastatic origin. coronal (Fig. 1A), sagittal (Fig. 1B) and transverse images (Fig. 1C) of ^{99m}Tc (V)DMSA SPET scintigraphy, portrayed a focal radiotracer accumulation in the left inner posterior parietal region, corresponding to the metastasis seen on CT and MRS images. Unfortunately, soon after, the patient passed away.

Brain metastases from breast cancer, diagnosed by ^{99m}Tc (V)DMSA SPET imaging, have not yet been reported. The absence of planar brain scintigraphic findings (Fig. 2) in this case indicates SPET significance.

Pentavalent ^{99m}Tc DMSA is a tumor seeking radiotracer, well-known for its ability to detect medullary thyroid carcinoma, osteosarcoma, primary lung, breast, brain tumors as well as osseous metastases specifically from breast and prostate cancer [1-6]. This oncophilic complex has also been experimentally used for radiation treatment [7]. This case indicates that the above technique may be a useful alternative for staging and restaging breast cancer patients, with relatively low radioactive burden to the patients and low cost, as opposed

to the use of a combined approach by both CT and MRS.

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Evangelia Sotiropoulou¹, **Pipitsa Valsamaki**², **Spyridon Tsiouris**³, **Nikolaos Ptohis**⁴, **Vassilios Papantoniou**⁵

1. Radiology Department, "Sotiria" General Hospital of Athens,
2. Nuclear Medicine Department, "Pammakaristos" General Hospital of Athens,
3. Nuclear Medicine Department, University Hospital of Ioannina,
4. and 5. Radiology Department and Nuclear Medicine Department, "Alexandra" University Hospital of Athens,

Correspondence address:

Vassilios Papantoniou, MD, PhD, Head of the Department "Alexandra" University Hospital, Department of Nuclear Medicine Vas. Sofias Ave 80, Athens, 11528, Hellas
email: vpapantoniou@gmail.com Tel: 0030-6937100588

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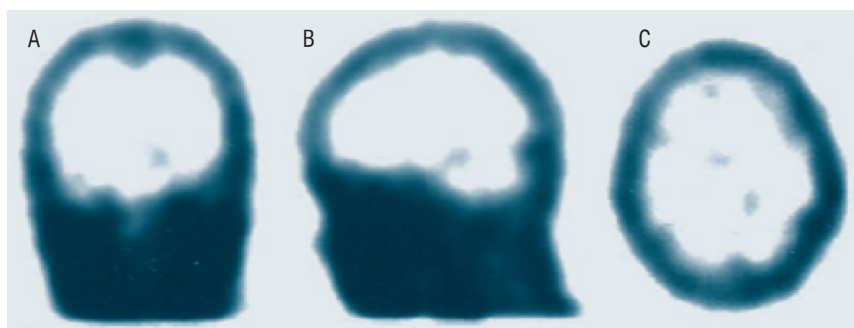


Figure 1. Depiction of a focal radiotracer accumulation on coronal (Fig. 1A), sagittal (Fig. 1B) and transverse images (Fig. 1C) of ^{99m}Tc (V) DMSA SPET brain scintigraphy.

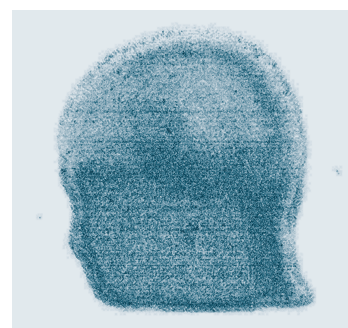


Figure 2. Planar lateral ^{99m}Tc (V) DMSA brain scintigraphy, did not reveal abnormal findings.