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Malignant melanoma of the breast : N-isopropyl-p-¹²³I-iodoamphetamine single photon emission computed tomography (¹²³I-IMP SPECT) is useful for the detection of metastasis

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LETTER TO THE EDITOR

Malignant melanoma of the breast: ^{123}I -IMP SPECT is useful for the detection of metastasis

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Dear Editor

Primary melanoma of the breast skin is rare, accounting for less than 5% of all malignant melanoma ^{1,2}. We present a case of malignant melanoma of the nipple. N-isopropyl-p-¹²³I-iodoamphetamine SPECT (¹²³I-IMP SPECT) was quite useful for the detection of metastasis. A 53-year-old woman had a blackish macule on her left areola of about 30 years duration. It gradually enlarged forming a tumor with occasional bleeding. Physical examination revealed a 2.0 × 2.2 cm-sized ulcerated blackish nodule on her left areola and nipple without palpable axillary lymph nodes. Excisional biopsy disclosed malignant melanoma with a tumor thickness of 7.2 mm. A total body computed tomography (CT) scan showed no distant metastases. The results of routine laboratory studies of blood and urine were normal. Serum 5-S-cysteinyldopa (5-S-CD) level was within normal limits (3.9 nmol/L). Modified radical mastectomy with left

axillary lymph node dissection was performed with 3 cm margin around the biopsy site. Histopathologic examination revealed irregular proliferation of oval to spindle-shaped atypical melanocytes, which were positive for HMB45, S-100, and MART-1. No metastases were detected in the dissected axillary lymph nodes. The pathological stage was stage IIC (pT4bN0M0).

After the operation, she received conventional adjuvant DAV-Feron therapy using dacarbazine, nimustine, vincristin and interferon- β . After the second course, however, left adrenal gland metastasis was detected by CT scan, for which adrenalectomy and two courses of DAC-Tam therapy using dacarbazine, nimustine, cisplatin and tamoxifen were performed. Six months later, CT scan revealed new lung and brain metastases. Stereotactic radiosurgery (20Gy) for brain metastases was performed with 2 courses of combination chemotherapy by cisplatin and docetaxel. Four months

later, however, abdominal CT revealed obstruction of splenic vein (Fig 1). ^{123}I -IMP SPECT demonstrated a hot spot at the site (Fig 2), indicating tumor embolism and not thrombosis. She then developed multiple lung and liver metastases, and died 20 months after the initiation of the therapy.

For the breast malignant melanoma, mastectomy has long been performed, because the cutaneous breast lymphatics are supposed to communicate with the parenchymal lymphatics at the subareola plexus³. However, it is now recognized that the axillary nodes receive all lymphatics from the subcutaneous and the subareola plexus, while the deep parenchymal ducts communicate the mammary glands lymphatics with the axillary and internal mammary lymph nodes and no communication exists between the subcutaneous lymphatics and those in the breast⁴. Furthermore, mastectomy did not improve the survival rate obtained by

wide excision plus axillary dissection^{2,5}. Although mastectomy was performed in our case, wide cutaneous excision with axillary lymph node dissection or sentinel lymph node biopsy might be sufficient in this context^{6,7}.

¹²³I-IMP was originally developed for the measurement of the brain blood flow. ¹²³I-IMP is incorporated into actively melanin-producing melanocytes and has been used to detect malignant melanoma and its metastases^{8,9}, specifically for those hard to detect such as uveal melanoma^{10,11}. Murata et al¹² reported that the uptake was detected in 10 out of 11 primary lesions by ¹²³I-IMP, while gallium-67 (Ga-67) scintigraphy detected only 2 of 8 lesions. With ¹²³I-IMP, as small as 9mm-sized lesion could be detected. Furthermore, SPECT could locate the tumor more precisely with the increased image contrast compared with planar scintigraphy. Kato et al¹¹ reported ¹²³I-IMP SPECT detected all 12 uveal melanomas, while 18-fluorodeoxyglucose positron

emission tomography (^{18}F -FDG PET) detected only 1 out of 9 cases. Thus ^{123}I -IMP SPECT is highly sensitive for the detection of small uveal melanoma. Review of the literature could not locate the paper, which directly compared ^{123}I -IMP SPECT with ^{18}F -FDG PET for detection of systemic metastasis of melanoma. We believe the method could be applicable to other small metastatic lesions as is the case of ^{18}F -FDG PET. In our case ^{123}I -IMP SPECT enabled us to distinguish thrombosis from tumor embolism, which highlights the clinical usefulness of the ^{123}I -IMP SPECT.

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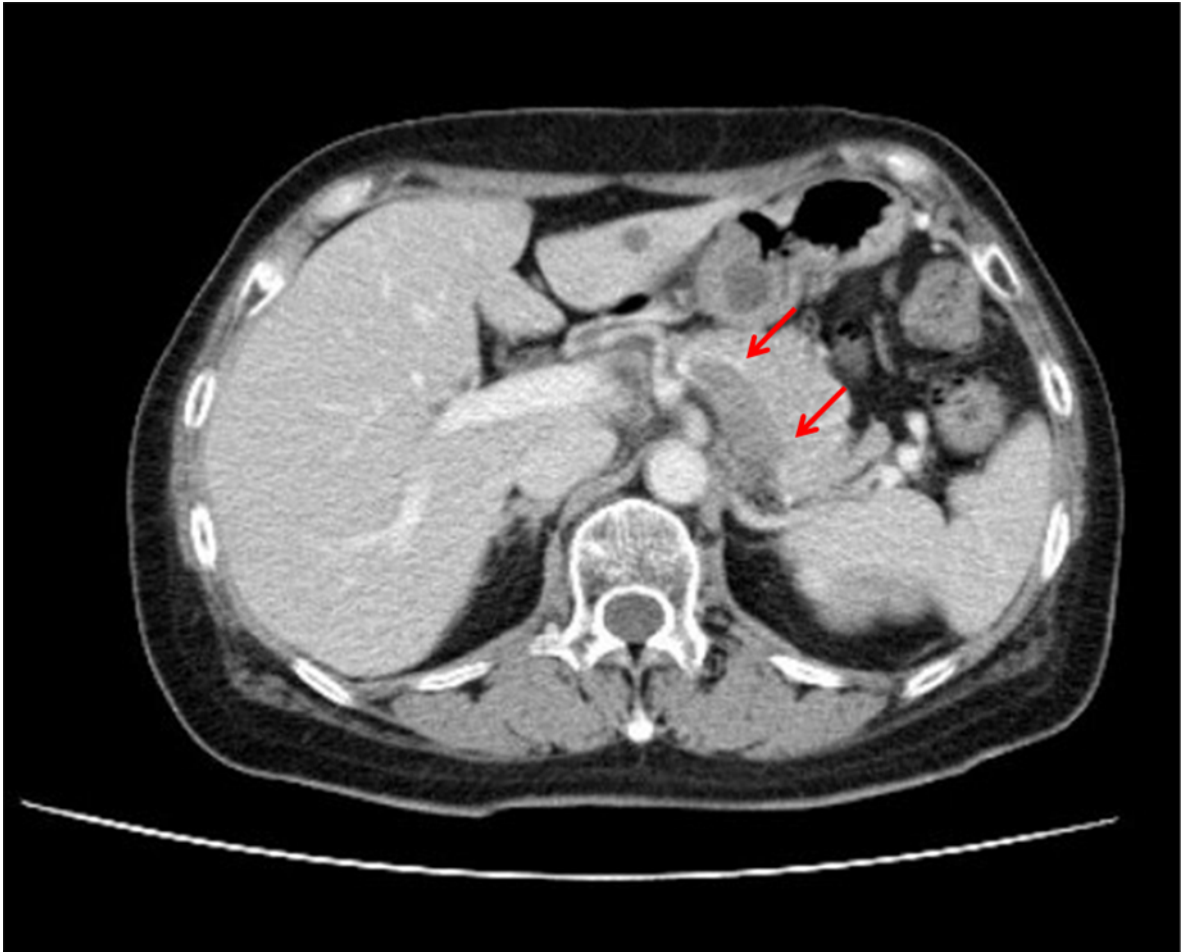


Figure1. Abdominal CT revealed obstruction of splenic vein

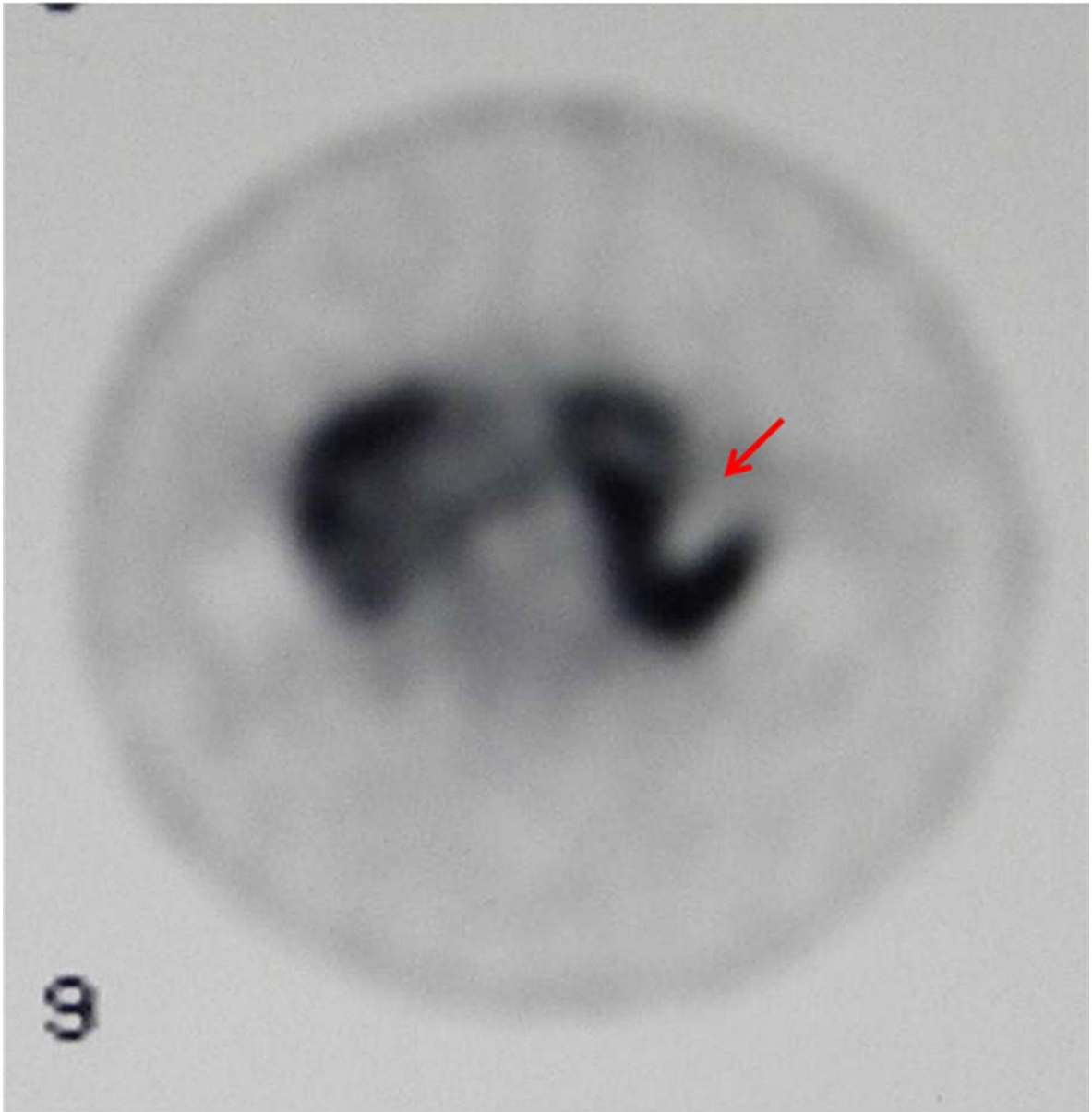


Figure2. ^{123}I -IMP SPECT showed hot spot at the site of the splenic vein obstruction (arrows). Liver (arrowhead)

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