

Image of the Month

Tumor dissemination along biopsy trajectory in brain metastasis

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A 52-year-old woman presented to neurosurgery clinic with a 2-week history of left-sided weakness. Magnetic resonance imaging (MRI) of the brain revealed a mass lesion with heterogeneous contrast enhancement and mild peritumoral edema in right thalamus (Fig. 1). Patient had no history of primary cancer. A PET-CT scan was obtained and showed no evidence of tumor in the whole body except a lesion in the brain. Differential diagnoses of the brain lesion included glioblastoma and metastasis. Then frameless stereotactic biopsy was performed using StealthStation S7 Vertek navigation system (Medtronic, Minneapolis, MN, USA). Microscopic evaluation attested a diagnosis of adenocarcinoma suggesting lung primary. Then patient was treated with Gamma Knife radiosurgery for solitary brain metastasis in

thalamus 10 days after the biopsy. Medical oncology opted to follow patient without any medical treatment and get repeat scan in 1 month. Patient presented with increased hemiparesis on the left side 6 weeks after stereotactic biopsy during the first-month follow-up. An MRI of the brain revealed seeding of the tumor along the entire stereotactic biopsy trajectory and a new contrast-enhancing lesion in right frontal region with subcutaneous invasion (Fig. 2). Then the patient received whole brain radiation therapy for disseminated tumor and deceased from progression of brain lesions. Stereotactic biopsy is crucial for especially deep-seated brain lesion when there is no previous history of cancer. Although tumor seeding along the needle trajectory is well known in visceral tumors, it is rare in brain

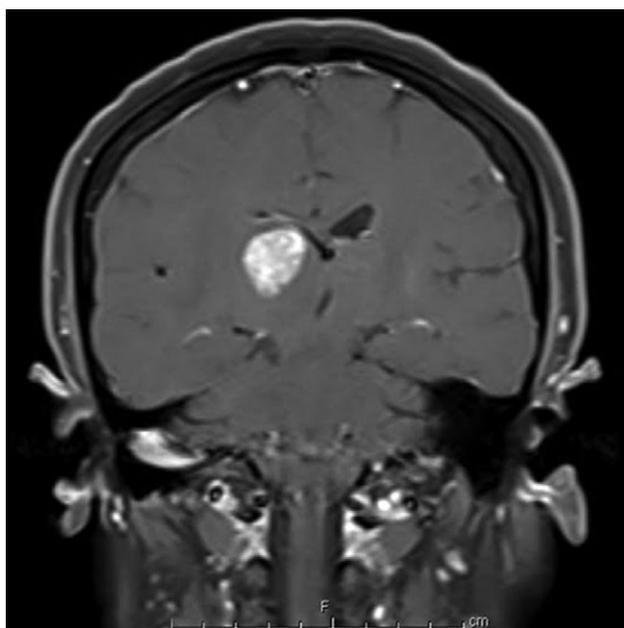


Figure 1. T1-weighted coronal MRI with gadolinium showed a mass lesion with heterogeneous contrast enhancement and mild peritumoral edema in right thalamus.

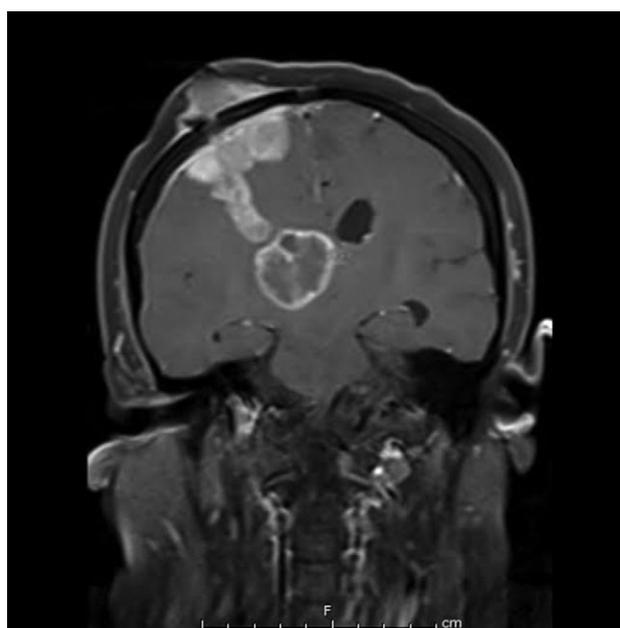


Figure 2. T1-weighted coronal MRI with gadolinium showed seeding of the tumor along the entire stereotactic biopsy trajectory and a new contrast-enhancing lesion in right frontal region with subcutaneous invasion.

tumors. This should be kept in mind to tailor the management of brain metastasis in patient with systemic cancer. Non-invasive examinations of the whole body should be performed to detect the primary tumor before attempting invasive procedures such as brain biopsy.

Conflict of interest statement

None declared.