Cyst with a mural nodule: Unusual case of brain metastasis

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A 34-year-old woman presented with history of headaches, vomiting and progressive left hemiparesis for the last 3 months. CECT showed right frontal juxtaventricular cystic lesion with an enhancing mural nodule and focal wall (Figure 1a). On MRI, the cyst was hypointense on T1WI (Figure 1b) and hyperintense on T2WI (Figure 1c) and suppressed on FLAIR sequence (Figure 1d). Per-operatively, a cyst with yellowish clear fluid and a small grayish, solid part were removed. The cyst walls were not necrotic. HPE revealed a malignant tumor composed of cells with focal areas of glandular differentiation with marked pleomorphism. The tumor cells were immunoreactive for cytokeratin and mucin. The wall of the cyst showed gliosis. A diagnosis of metastatic adenocarcinoma was made. No primary could be localized.

The radiological differential considerations for a cystic tumor with an enhancing mural nodule include pilocytic astrocytoma, hemangioblastoma, pleomorphic xanthoastrocytoma, meningioma and ganglioglioma.1,2 The radiological finding of a cystic tumor with a mural nodule had not been described previously in brain metastases. The presence of minimal edema relative to the size of the lesion in our case was also unusual for a metastatic deposit. FLAIR sequences have been reported to be useful in distinguishing between cystic neoplastic and non-neoplastic lesions.3 The cyst had suppression of signal intensity on FLAIR imaging, thereby suggesting non-mitotic pathology. This unusual appearance is possibly attributed to the lack of proteinaceous or myxoid material inside the cyst, which is rare in metastasis. Therefore, FLAIR images should be interpreted with caution.

References


Figures 1a - 1d: Contrast enhanced CT (Figure 1a) shows a cystic lesion with an enhanced mural nodule (white arrow) in right frontal lobe. Cyst has smooth, thin wall with focal wall enhancement and minimal edema. Cyst follows CSF signal intensity on T1WI (Figure 1b) and slightly hyperintense to CSF on T2WI (Figure 1c) and suppression of signal on FLAIR image (Figure 1d). Mural nodule is isointense to gray matter on T1WI (black arrow) (Figure 1b) and T2WI (Figure 1c)

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