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Letter to the Editor

Case report: Hemorrhage in the wall of an abscess mimicking a hemorrhagic tumor

Keywords:

Neuroinfections

Abscess

Hemorrhage

Hemorrhage is not uncommon in cystic neoplasms but is a very rare occurrence in brain abscesses. A hemorrhage in the wall of a cyst usually signifies a tumor but an abscess may rarely have hemorrhages in the wall. Knowledge of this is important in order to avoid unnecessary surgery under the misdiagnosis of a hemorrhagic malignant tumor.

We present a case of a pyogenic brain abscess, demonstrating signal changes consistent with hemorrhage, mimicking a hemorrhagic tumor.

1. Case

A 47 year old previously healthy man was admitted to our department because of a severe headache lasting ten days. On the day of admission he experienced difficulties using his left arm. The clinical examination revealed a mild weakness of the left-sided intrinsic hand muscles and a left-sided sensory neglect. He was not febrile. An MRI revealed a large cerebral mass lesion located in the parieto-occipital region measuring 26 mm × 27 mm and exhibiting irregular ring enhancement and perilesional vasogenic edema. The T2* sequence demonstrated hypointensity in the wall of the lesion consistent with hemorrhage. Due to the presence of hemorrhage and prominent edema, a hemorrhagic cystic tumor was considered a possible diagnosis. However since the lesion showed restricted diffusion (hyperintense on diffusion-weighted MRI), a brain abscess was considered equally likely (Fig. 1).

The patient was scheduled for surgery. Since there was still uncertainty about his diagnosis, he was scheduled for a possible abscess aspiration, with the possibility of performing a craniotomy if this proved unsuccessful. Pus was aspirated

from the process and confirmed the diagnosis of an abscess. Subsequent culture yielded growth of streptococcus anginosus

2. Discussion

Hemorrhage into the wall of an abscess is a rare occurrence and may cause difficulty differentiating it from a cystic neoplasm with hemorrhage or a hemorrhagic metastasis. A few case reports of abscess wall hemorrhages have been reported previously [1,3–5].

On diffusion weighted MRI abscesses appear hyperintense while brain tumors tend to be hypointense. However some tumors (such as meningiomas, pleomorphic xanthoastrocytomas, gangliogliomas, neurocytomas, pituitary adenomas, epidermoid tumors, pineocytoma and papillary tumors of the pineal gland) may present with areas of restricted diffusion [2]. As hemorrhages (including hemorrhages in tumors) may likewise appear hyperintense, differentiating between a hemorrhagic tumor and an abscess with a wall hemorrhage may sometimes be difficult. MR spectroscopy can be useful in differentiating abscesses from other cystic masses [3]. T2*-weighted angiography (SWAN) imaging may be more sensitive in detecting hemorrhages in the abscess wall [1].

The mechanism of hemorrhage in an abscess wall is not known but may be due to the rupture of newly formed fragile vessels in the abscess wall either due to distortion or failure to thrombose as the abscess expands [4].

We have presented a case of a hemorrhagic brain abscess mimicking a hemorrhagic tumor or metastasis. We advise clinicians and radiologists to consider abscesses as a differential diagnosis to hemorrhagic tumors as it may prevent unnecessary surgery.

Informed patient consent

The patient has consented to the submission of this case report to the journal. Both authors participated in the writing of the article and approved the final article.

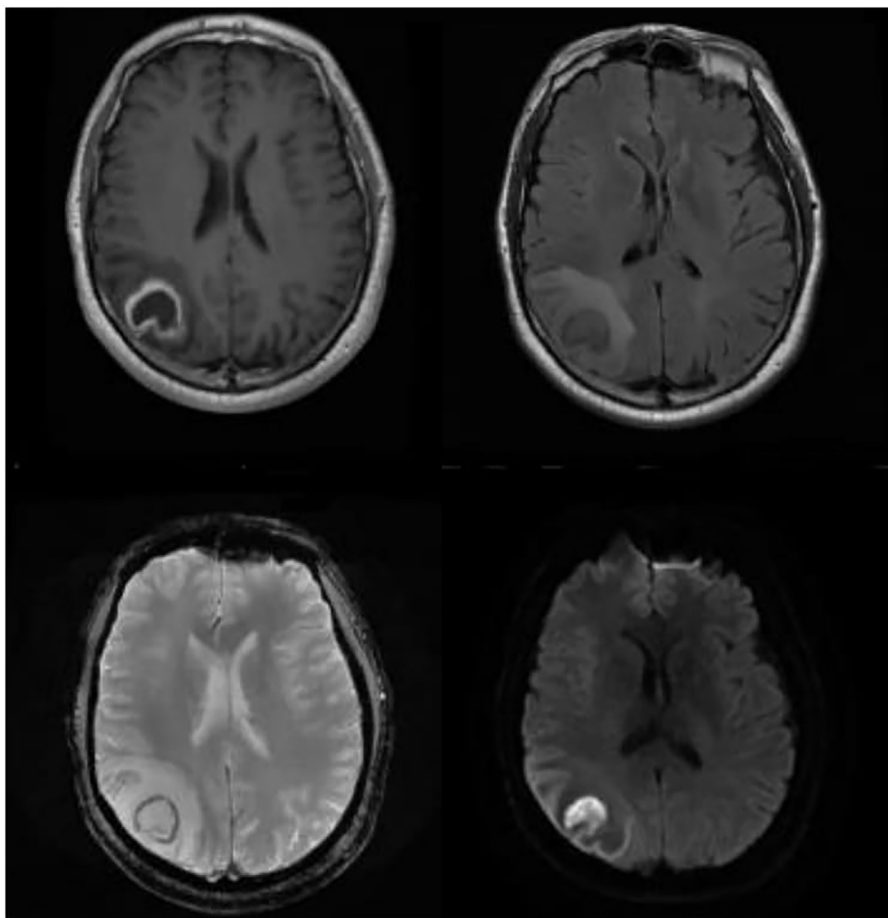


Fig. 1 – Upper left: T1 sequence with gadolinium showing irregular ring enhancement. Upper right: T2 flair sequence showing a mass lesion with prominent surrounding edema. Lower left: T2* sequence showing hypointensity in the wall of the lesion. Lower right: DWI showing restricted diffusion of the lesion.

Conflict of interest

None declared.

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