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CENTRAL NEUROCYTOMA

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Key-word: Neurocytoma

Background: A 40-year-old man presented with short-term memory loss and behavioral changes.There was no previous medical history and neurological examination was normal.

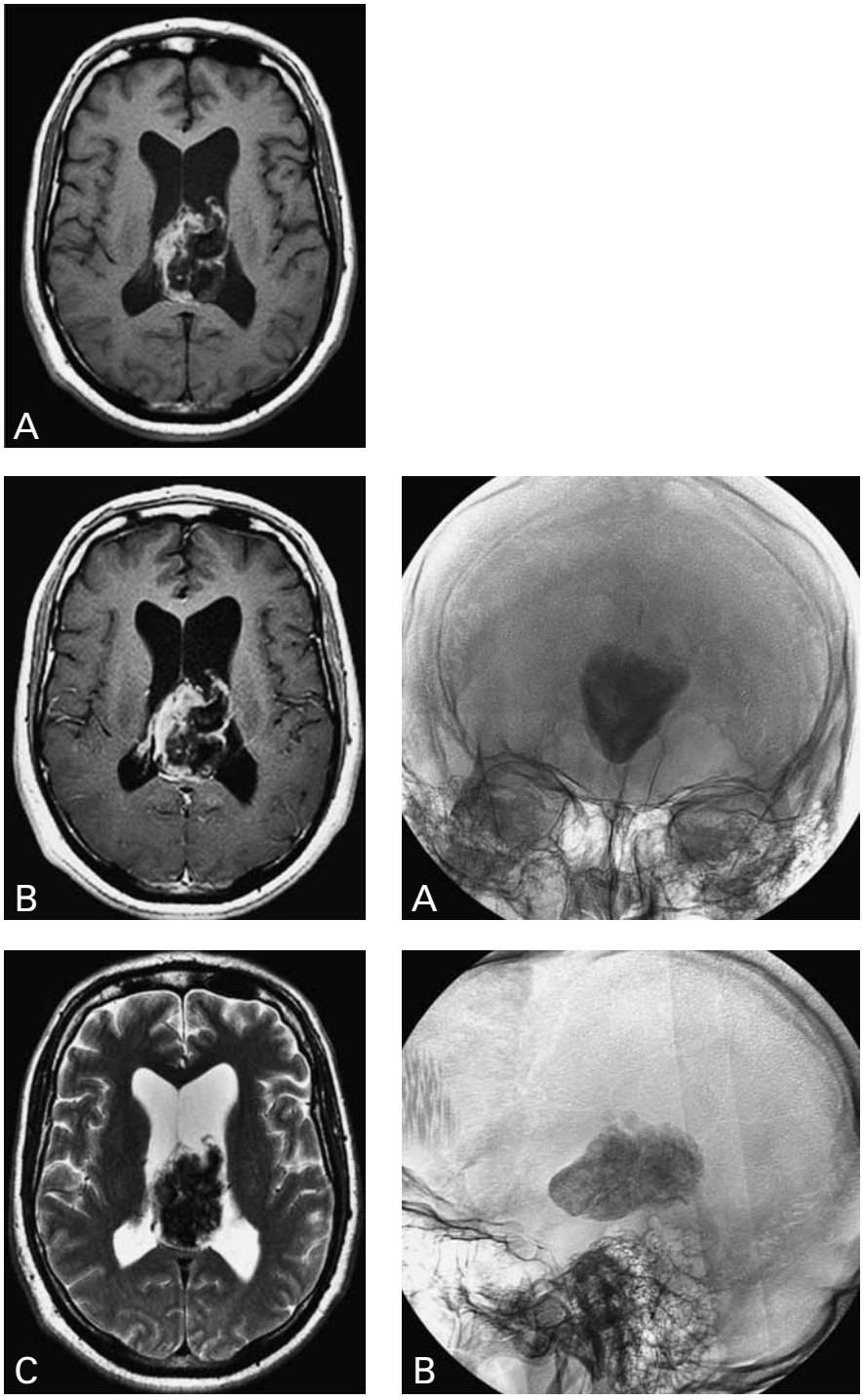

Fig. 1A | 1B | 2A | 1C | 2B

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Work-up

MRI of the brain (Fig. 1) shows on axial turbospin-echo T1-weighted image (A) a midline intraventricular tumor with hypointense as well as hyperintense portions. On axial turbospin-echo gadolinium-enhanced T1-weighted image (B), the tumor shows moderate contrast enhancement. On axial turbospin-echo T2-weighted image, the tumor is remarkably hypointense (C). Radiographies of the skull (Fig. 2) include native images before vessel opacification during cerebral angiography (non-subtracted images), antero-posterior view (A) and lateral view (B) on which extensive diffuse calcification of the tumor is seen. On angiography, the tumor was non-vascular (not shown).

Radiological diagnosis

Surgery was performed, and the tumor was completely resected. Histological examination revealed a *central neurocytoma*.

Discussion

Central neurocytoma are rare and relatively benign intraventricular neuro-epithelial tumors with neuronal differentiation (WHO grade II tumor of neuronal origin).

These lesions are usually discovered in young adults, commonly at 20-40 years of age. They represent 50% of the intraventricular tumors in this age group and approximately 10% of all intraventricular masses. Less than 1% of all intracranial neoplasms are central neurocytomas. There is no gender predominance.

Most common symptoms include headache, visual changes, mental status changes and seizures.

MRI-images of central neurocytoma are usually characteristic. Most neurocytomas occur as exophytic, well-circumscribed, globular masses that protrude into the ventricles. Large tumors are not uncommon.

Calcifi cations are common and can be easily identified on CT scan. The calcifications may be extensive, as was the case in our patient. Central neurocytomas arising in the lateral ventricles typically adhere to the septum pellucidum. Hydrocephalus is common due to obstruction of the foramen of Monro.

On T1- and T2-weighted images, central neurocytomas are usually isointense to gray matter. The marked hypointensity on the T2-weighted image in the presented patient is explained by the extensive calcifications. Intratumoral hemorrhage can explain high signal on T1-weighted images, but hemorrhage is not a typical finding in central neurocytoma. Contrast enhancement is usually mild to moderate.

From an imaging point of view, differential diagnosis should include oligodendroglioma, ependymoma, subependymoma, subependymal giant cell astrocytoma, choroid plexus papilloma, and intraventricular meningioma.

Surgical resection is typically curative and recurrence is uncommon.

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