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SUPRASELLAR LIPOMA

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Key-word: Lipoma and lipomatosis

Background: A 48-year-old woman suffering from headaches for a longer period of time underwent a MRI scan. Based on the MRI findings, she was referred to our hospital for further analysis of a suprasellar lesion. In addition, we performed a non-contrast and a contrast-enhanced CT scan.

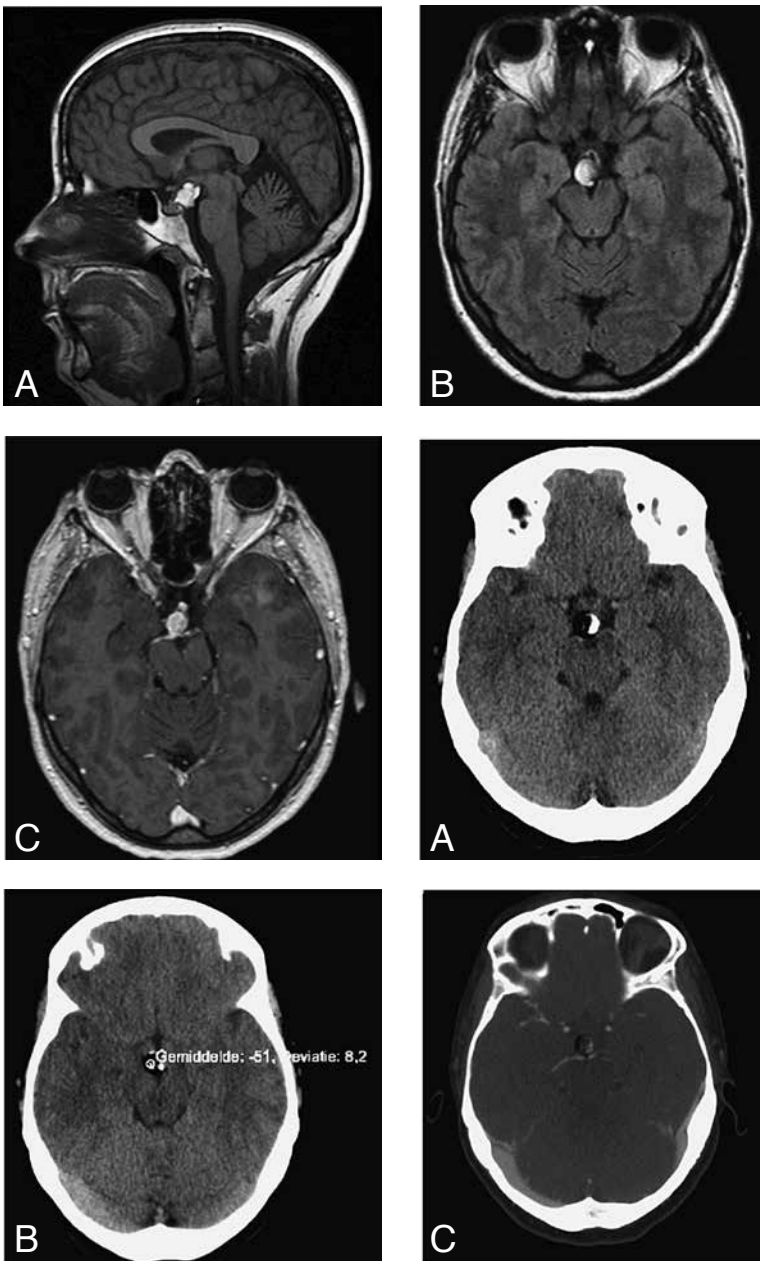

Fig. 1A | 1B / 1C | 2A / 2B | 2C

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Work-up

MRI of the brain (Fig. 1) shows on sagittal T1-weigthed image (A) a hyperintense, lobulated lesion in the suprasellar cistern is observed. Transverse T2-weigthed (TSE) image (B) reveals that the suprasellar lesion is also hyperintense on this sequence. Transverse On T1-weigthed image, after Gadolinium administration (C), the suprasellar lesion does not enhance and remains unchanged as compared to the native T1 image (A).

CT scan of the brain (Fig. 2) demonstrates on transverse unenhanced CT images (A,B) a suprasellar lesion with density value of -51 HU and peripheral calcification. Transverse contrast-enhanced CT image (C) shows no contrast filling or enhancement at the suprasellar lesion.

Radiological diagnosis

Based on the imaging findings the diagnosis of *suprasellar lipoma* was made.

Discussion

Based on the MRI findings, the patient was referred to our hospital for further analysis of a possible partially thrombosed basilar tip aneurysm. The suprasellar lesion was rather lobulated and showed a homogeneously high-signal intensity on the native T1-weighted MRI sequence. The signal intensity remained high on both the T2-weighted TSE sequence and the T1-weighted sequence after Gadolinium. Based on these findings, the differential diagnosis was a thrombosed aneurysm or a lesion containing a large amount of fat. Confusion was caused by the fact that the lesion seemed to be connected with the vascular territories of the basilar artery. Unfortunately, no additional MRA or fat-saturated images were made.

In order to confirm the presence of fat, we conducted a CT scan with and without contrast. The low density values (-51 HU) on the native CT images confirmed the suspicion of the presence of fat. In addition, the lesion did not enhance after contrast medium injection. The diagnosis changed from a suspect basilar tip aneurysm to a suprasellar lipoma. The benign nature of the lesion was explained to the patient and she did not receive any subsequent treatment.

Intracranial lipomas (IL) are congenital lesions that result from an abnormal differentiation of the embryologic meninx primitiva. Most IL are asymptomatic and, therefore, often found as an incidental finding on brain imaging performed for other reasons. Although IL can occur at a wide variety of locations within the brain, some regions are affected more often than others. Characteristic areas are the pericallosal area (45%), the cisterna quadrigemina (25%), the suprasellar cistern (15%), the cerebellopontine angle (10%) and the sylvian fissure (5%). The characteristic appearance of an IL on CT scan or MRI is that of a lesion that to a large extent is build up of fat. Therefore, on non contrast-enhanced CT scan IL will have density values ranging from -39 to -80 HU. On MRI, fat saturated images are very helpful to prove the presence of fat. After administration of contrast medium, both on CT scan and MRI, the lesion shows no enhancement, while sometimes peripheral calcifications may be present. The differential diagnosis of an intracranial fat-containing mass consists of intracranial dermoid, intracranial teratoma and lipomatous transformation of a neoplasm (pancreatic neuroendocrine tumor, ependymoma, glioma). Other, non fat containing, masses with a high signal intensity on T1-weighted images are a thrombosed aneurysm or a white epidermoid. A white epidermoid is a very rare disorder which will show restriction on the diffusion-weighted images.

Bibliography

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