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ESSENTIAL IMAGE /*Head and neck imaging*

Fluid-fluid level in postpartum pituitary microadenoma necrosis on MRI

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A 34-year-old woman had a recent history of prolactin-secreting pituitary microadenoma that was initially treated using cabergoline and later bromocriptin. After she delivered a healthy baby, a routine magnetic resonance imaging examination of the pituitary gland revealed a single fluid-fluid level within the pituitary gland with a difference in signal intensity between the two components visible on both T1-and T2-weighted images. On T1-weighted images (Fig. 1A) the upper fluid layer was hyperintense and the lower one isointense. On T2-weighted images (Fig. 1B; Fig. 1C), the uper fluid layer was hyperintense and the lower one hypointense. No enhancement was visible after intravenous administration of gadoterate meglumine (D). Internal fluid-fluid level has been reported in a variety of tumors [1]. Pituitary tumor is the most frequent location of bleeding among benign intracranial tumors [2] and present in 6.4% of all pituitary tumors [2]. Our patient had hemorrhagic necrosis of a prolactinoma during the postpartum period. Pregnancy induces major pituitary changes and monitoring of microprolactinomas is usually recommended two months after childbirth. The hyperintense upper fluid layer on T1- and T2-weighted images suggests extracellular methemoglobin consistent with relatively recent hemorrhage. The hypointense lower layer on T1-and T2-weighed images suggests precipitating hemosiderin. However, the exact mechanism has not been fully elucidated because it may be possible that fluid-fluid level may be the result of tumor cystic-necrotic degeneration [2].

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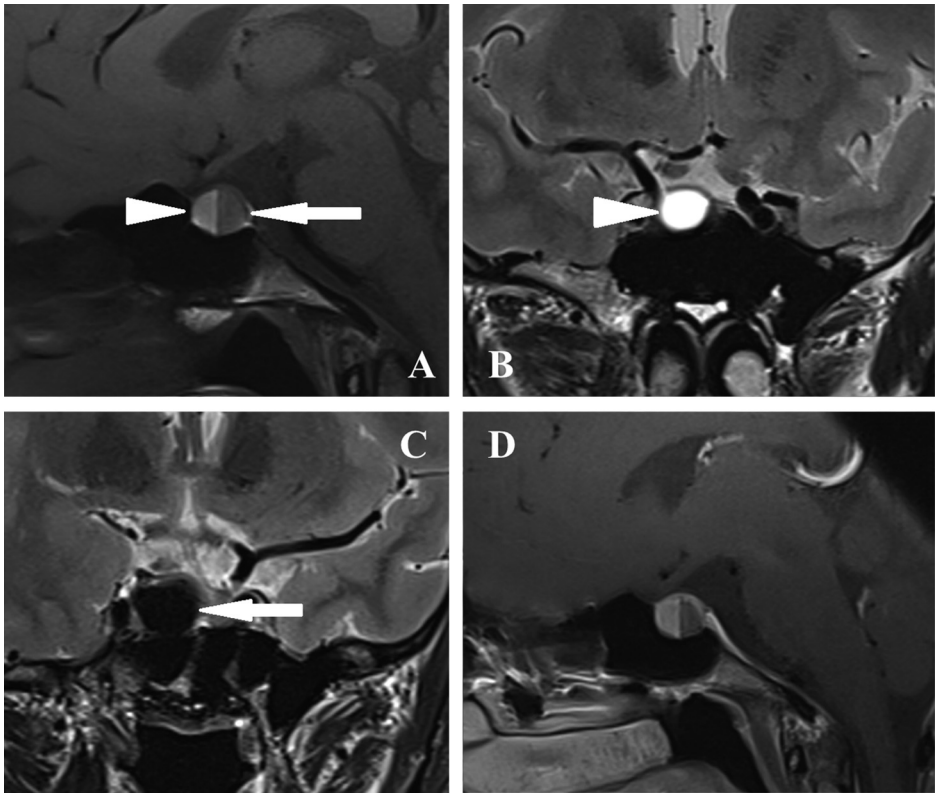

Figure 1. T1-weighted MR images (sagittal plane, A) the upper fluid layer was hyperintense and the lower one isointense. On T2-weighted images (coronal plane, anterior portion of the gland, B; coronal plane, posterior portion of the gland, C), the upper fluid layer was hyperintense and the lower one hypointense. No enhancement was visible after intravenous administration of gadoterate meglumine (sagittal plane, D).

Disclosure of interest

The authors declare that they have no competing interest.

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