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GÜLGÜN YILMAZ OVALI

SERDAR TARHAN

HÜSEYİN ŞENTÜRK

PETEK BAYINDIR

YÜKSEL PABUŞÇU

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SHORT REPORT

Pituitary Abscess Simulating Macroadenoma

Gülgün YILMAZ OVALI , Serdar TARHAN, Hüseyin ŞENTÜRK,
Petek BAYINDIR, Yüksel PABUŞÇU
Department of Radiology, Faculty of Medicine, Celal Bayar University, Manisa - Turkey

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Case

A 54-year-old male, complaining of polyurea, polydipsea, headache and visualisation problems was hospitalised. On physical examination, the right eye's field of view was limited in the superior temporal region. Restricted water intake revealed diabetes incipidus. Since his T3, T4 and cortisol levels were low, the patient was further examined with synacthen and diagnosed as having panhypopituitarism.

Using cranial MRI, a bilobulated, 2.5 X 1.2 X 1.1 cm cystic lesion occupying the sella and obliterating the suprasellar cistern was detected (Figure 1a, b, c, d). The lesion was hypointense on T1-weighted (T1W) (Figure 1a, b) and hyperintense on both T2-weighted (T2W) (Figure 1c) and FLAIR images, with a central focal nodular component. This nodular component appeared hyperintense on T1W (Figure 1a, b) and hypointense on both T2W (Figure 1c) and FLAIR (Figure 1d) images. The mass lesion displaced the infundibulum anteriorly, settled down near the hypothalamus and compressed the optic chiasm. By eroding the floor of the sella the lesion showed a slight extension into the sphenoidal sinus on postcontrast scans (Figure 2a, b, c), and the lesion showed peripheral enhancement. A retention cyst of the sphenoidal sinus and mucosal thickening in the posterior ethmoidal cellules accompanied the lesion.

In the light of these findings, the lesion was regarded as a macroadenoma containing cystic and haemorrhagic components. During surgery there was a focal defect on the floor of the sella, and infected pus material was aspirated. No adenoma was detected during surgery. The aspirated material was determined to have central bleeding foci and the case turned out to be a pituitary abscess. The previously mentioned central focal nodular component that appeared hyperintense on the T1W and hypointense on the T2W images was attributed to the haemorrhage that was macroscopically evaluated. No mass lesion was detected during the follow-up MRI checks (Figure 3).

Pituitary abscess is a rare and serious condition. Pituitary insufficiency, headaches and visual problems are the most common clinical presentations. Central nervous system symptoms like fever or meningismus are infrequent, as in our case (1).

A cystic lesion showing peripheral enhancement is likely to be an abscess. According to the literature, it is strongly suggested that lesions prediagnosed as adenomas with CT and MR imaging findings might turn out to be abscesses. A history of surgery may be the leading point for an abscess (1). Our patient did not have a history of surgery.

The sellar/parasellar mass lesions that may include cystic components are adenoma, carcinoma, abscess, arachnoid cyst, colloid cyst, Rathke cleft cyst, craniopharyngioma and metastasis. Adenoma is the most common sellar/parasellar mass that shows necrosis and

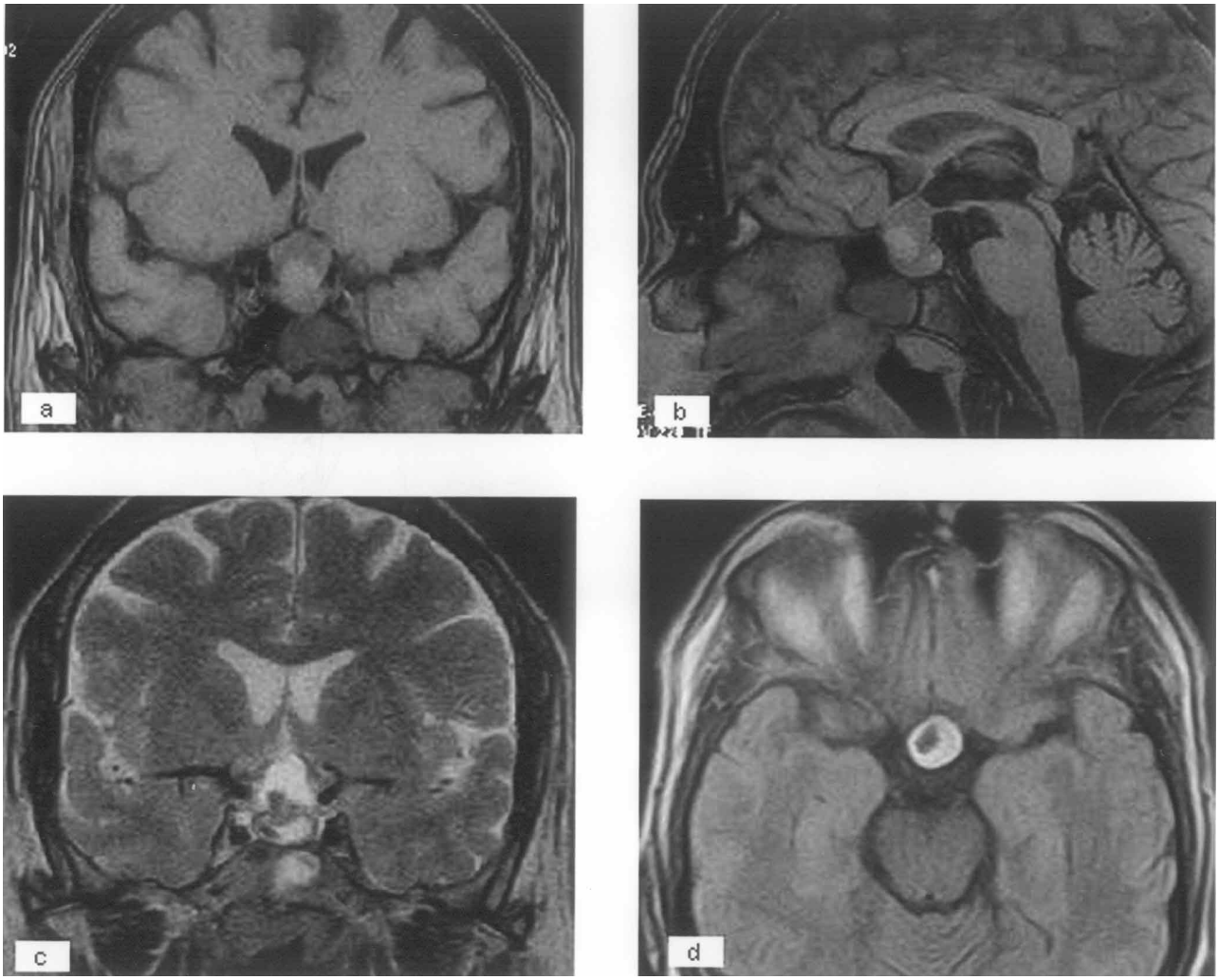

Figure 1. On T1W coronal (a), sagittal (b), T2W coronal (c) and FLAIR axial (d) images, there is a bilobulated cystic sellar and suprasellar mass lesion eroding the floor of the sella and compressing the optic chiasm. The lesion contains a central focal nodular component that appears hyperintense on T1W (a,b) and hypointense on the T2W (c) and FLAIR (d) images.

hemorrhage and frequently contains cystic components. Pituitary carcinoma is rare, and malignancy can be diagnosed only if metastases are present. Classically, arachnoid cysts showing heterogeneous signal intensity due to epithelial secretions and peripheral enhancement are unusual. Arachnoid cysts appear isointense to the cerebrospinal fluid (CSF) in all sequences, including FLAIR. Colloid cysts are located anteriorly in the third ventricle in general. In spite of the variations, colloid cysts usually appear hyperintense on T1W and hypointense on T2W images. Rathke cleft cysts show hyperintensity on T1W images and T2W appearance shows variations as follows: hyperintensity 50%, isointensity 25% and hypointensity 25%. Calcification is unusual and half of the Rathke cleft cysts show peripheral enhancement. Metastases are unlikely to show a cystic nature and comprise only 1% of sellar/parasellar mass lesions. Ninety percent of craniopharyngiomas are partially cystic in nature with solid mural nodules and show peripheral enhancement (4).

The focal nodular component which was located centrally in the lesion and appeared hyperintense on T1W and hypointense on the T2W images should be used to determine the differential diagnosis. The lesions that appear hyperintense on T1W images may be reviewed as

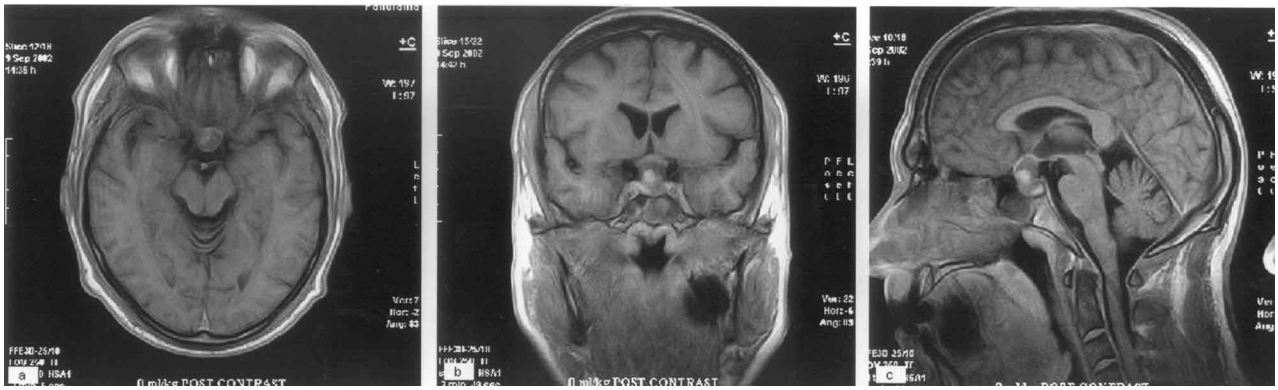

Figure 2. On postcontrast T1W axial (a), coronal (b) and sagittal (c) images, the lesion shows peripheral enhancement.

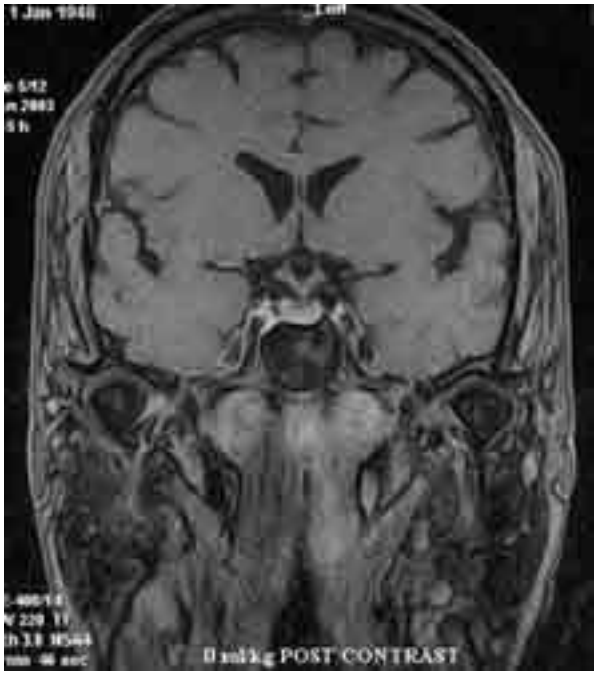

Figure 3. Postoperative postcontrast T1W coronal image; no residual mass lesion detected.

follows: Rathke cleft cyst, subacute haemorrhage, postoperative haemorrhage and a fat graft. Since the patient did not have a history of surgery, this bright focus was evaluated as a haemorrhage, and this was also confirmed pathologically.

In conclusion, the signal characteristics of the pituitary abscess may vary according to the additional complications. Therefore, when evaluating a patient presenting with the symptoms of hypopituitarism and having a pituitary cystic lesion with heterogeneous signal intensity, and showing peripheral enhancement, pituitary abscess should be taken into consideration for the differential diagnosis.

Corresponding author:
Gülgün YILMAZ OVALI
Department of Radiology, Faculty of Medicine,
Celal Bayar University, Manisa - Turkey
e-mail: gulgunyilmaz@hotmail.com,
gulgun.yilmaz@bayar.edu.tr.

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