Does a pituitary cyst disappear spontaneously: A case report

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Abstract: The authors describe an unusual case of large pituitary cyst and discuss its spontaneous disappearance in the follow-up. A 27-year-old male patient with sudden onset of nausea and headache admitted with a sellar hypodense mass lesion diagnosed by computed tomography (CT). Magnetic resonance (MR) imaging of the patient with normal neurological examination showed intrasellar mass lesion hypointense on T1 weighted and hyperintense on T2 weighted MR images. Conservative treatment was selected for the patient with no neurological deficits. On the serial follow-up images, the cystic lesion disappeared without any intervention. Based on the previous reports, onset of symptoms, clinical findings and MRI characteristics, this case was diagnosed as a Rathke's cleft cyst with presumed disappearance after the hemorrhage into the cyst. Sellar cysts without neurological deficits may be followed-up without surgical intervention.

Key Words: Hemorrhage, Management, Pituitary Cyst, Rathke's Cleft Cyst, Spontaneous Regression.

The differential diagnosis of a sellar region lesion includes pituitary adenoma, craniopharyngioma, tumor cyst, benign cyst and other less common lesions such as aneurysm, squamous cell carcinoma and metastases. Pure cystic lesions within the sella turcica are not uncommon and may appear clinically and radiologically as pituitary adenoma [1]. Intrasellar cysts are broadly classified as neoplastic or non-neoplastic; the latter may be primary lesions of the pituitary fossa or they may arise from the parasellar region and invade into the sella [1]. Pituitary cysts are found in as many as 33% of general autopsies [2]. Although most pituitary cysts are asymptomatic, they can compress the pituitary gland, the optic chiasm and the hypothalamus, causing hormonal abnormalities, visual disturbances and headaches [1,2]. The wide availability of magnetic resonance (MR) imaging has resulted in the discovery of many unsuspected, endocrinologically silent intrasellar masses [3,4,5]. We report a patient with a presumed Rathke's cleft cyst that presented with headache and nausea. The cyst disappeared over months without any therapeutic intervention. Such events have only rarely been reported [2,4,5,6].

Case Report

History and Examination. A 27-year-old healthy man, had sudden severe frontal headache and nausea. Computed tomography (CT), performed on the fourth day at a different institute showed a hypodense sellar mass lesion and the patient was admitted to our department. There was no history of lethargy, heat or cold intolerance, polyuria and polydipsia. On the neurological examination, there was no pathological findings, including visual field deficits, oculomotor abnormalities and nuchal rigidity. Routine laboratory examinations and endocrine tests, including hypophyseal hormones were normal.

Imaging. On the MR images performed on the fifth day, an intrasellar cystic lesion with slight suprasellar extension and without optic chiasm compression was observed. Intrasellar cystic lesion was hypointense on T1 weighted images and hyperintense on T2 weighted images. Within
the cyst, an abnormal appearance consistent with a small old clot which was hyperintense on T1 weighted images and hypointense on T2 weighted images. The cyst showed moderate peripheral enhancement with contrast medium (Figure 1).

Clinical Course. Since the patient's complaints disappeared in the first week of onset and there was neither endocrine dysfunction nor neurological deficit, we selected conservative treatment with close observation. However the patient's compliance was poor and a repeat MR imaging has not been obtained for another 8 months. Disappearance of the intrasellar cystic lesion in association with a partial empty sella was observed on MR images (Figure 2). To date, the patient has had no endocrine dysfunction and neurological deficit. Regrowth of the pituitary cystic lesion has not been observed on follow-up MR imaging repeated 17 months after the onset (Figure 3).

Figure 1. MR images show intrasellar cystic lesion. No apparent compression of optic chiasm is noted. (a) Sagittal T1 weighted image without contrast shows hypointense cyst content with a hyperintense old clot inferoposteriorly (b) Sagittal T1 weighted image with contrast shows moderate rim enhancement (c) Coronal T1 weighted image without contrast (d) Coronal T1 weighted image with contrast
Discussion

Pituitary fossa cysts are relatively common observations in general autopsy series. There are various pathological types, including Rathke's cleft cysts, cystic pituitary adenomas, craniopharyngiomas, pars intermedia and colloid cysts, epidermoid cysts, dermoid cysts, and arachnoid cysts [2,5,7].

Symptoms associated with pituitary cysts arise from local mass effect and include headache, visual disturbances, and endocrine dysfunction [7]. Rarely, aseptic meningitis and abscess associated with pituitary cysts were reported [8]. The patient presented in this report had headache and nausea.

The MR appearances of a Rathke's cleft cyst and
other non-neoplastic cysts have been correlated with their contents. They may contain CSF-like fluid, thick mucinous material, or even waxy cellular debris and they show various intensities on T1 and T2 weighted images [2,8,9,10]. They may be differentiated using modern neuroimaging modalities [5]. They are typically well-defined, round or lobulated, non-calsified lesions. In craniopharyngiomas, cyst content shows high intensity on T2 weighted images [2,4]. The cyst wall is irregularly enhancing in pituitary adenomas, and strongly so in craniopharyngiomas [4]. A thin peripheral rim of contrast enhancement rarely occurs [7]. The location of the normal pituitary gland is posterosuperior in pituitary adenomas, inferior in craniopharyngiomas, and varies in Rathke's cleft cysts [3,4]. Calcification is commonly seen in craniopharyngiomas, but not in other cystic lesions [10]. In our case cyst content was hypointense on T1 weighted images and hyperintense on T2 weighted images. No calcification and moderate peripheral enhancement with contrast were observed. The normal pituitary gland was not defined in the pituitary fossa. A small hemorrhage within in the cyst was suggested. Based on MR images, the cyst was thought to have a benign nature, probably being a Rathke's cleft cyst. The hemorrhage was most likely the cause of sudden onset of headache and nausea.

Immediate trans-sphenoidal surgery was thought to be unnecessary due to absence of visual and endocrine disturbances. Conservative treatment with close observation was selected. Repeat MR images showed disappearance of the pituitary cyst in association with a partial empty sella. Follow-up MR images obtained 17 months after the onset revealed no recurrence of the cyst. The possible pathophysiology of regression or disappearance of pituitary cysts were previously reported as resorption or rupture of the cyst and hemorrhage into the cyst [2,5,6,11,2]. In our case we hypothesize that partial cyst rupture with hemorrhage into the cyst produced symptoms as reported in previous cases. MR images 5 days after the onset of complaints did not show an expected total collapse of the cyst which leads us to suggest that total collapse may require more than one week. Nishio9 explained the development of sudden headache and nausea with the hemorrhage into the cyst and absence of MR imaging characteristics of hemorrhage in the first case with delayed performance of MR imaging. While pituitary hemorrhage usually occurs into a pituitary adenoma, hemorrhage into other sellar lesions including a Rathke's cleft cyst has also been reported [2,12,13]. In our case, MR imaging performed on admission showed lesion consistent with hemorrhage within the cyst.

For the majority of patients with symptomatic pituitary cysts, traditional management providing safe and effective treatment is simple trans-sphenoidal drainage and biopsy of the cyst wall [7,14]. Although the causitive mechanism of pituitary cyst regression has not been documented well, sufficient follow-up is warranted before surgical intervention if the pituitary cyst does not create serious or progressive symptoms.

Conclusion
Although the regression or disappearance of a pituitary cyst based on radiological findings has only been reported rarely, cystic sellar lesions may spontaneously decrease in size and disappear. Thus we may simply select a close observation of the patients who have no visual and endocrinological abnormalities to obviate neurosurgical intervention.

References
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