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Spontaneously regressing infundibular cyst: a case report

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Abstract A 74-year-old man reported headaches and blurring of vision for 1 month. MRI showed a nonenhancing infundibular cyst. Neurologic findings, blood and cerebrospinal fluid examinations, and chest and abdominal CT were all normal. MRI 4 months later showed no change. The patient was without any medication other than simple analgesics. One year later, the stalk had returned to its normal size and configuration on MRI.

Key words Stalk, pituitary · Cyst, infundibular · Magnetic resonance imaging

Introduction

Sellar region cysts include Rathke's cleft cyst, cystic pituitary adenoma, arachnoid cysts, dermoid/epidermoid cysts and cystic craniopharyngioma. A cyst in the infundibulum is extremely rare [1]. Spontaneous regression of a pituitary cyst has been reported [2], but not of an infundibular cyst.

Case report

A 74-year-old man was admitted with a 1-month history of headaches and intermittent blurred vision. There was no history of systemic disease, and examination was normal. MRI at 1.0 T showed an enlarged, oval pituitary stalk reaching 9 mm in width (Fig. 1). The stalk was isointense on T1-weighted images and gave low signal relative to the cortex on T2 weighting. The signal intensity did not correspond to any stage of haemorrhage. A very small anterosuperior part of the stalk showed linear contrast enhancement,

suggesting that the lesion originated from the posterior part of the infundibulum. The entire length of the stalk was clearly seen. The thickened stalk was not compressing the optic pathways or the pituitary gland. The pituitary gland, medial eminence and tuber cinereum were normal in size and shape. The other parts of the brain showed no abnormality.

The patient underwent detailed investigation to ascertain the nature of the mass. No calcification was seen on CT. Cerebrospinal fluid (CSF) analysis, plasma and urinary osmolarities before and after water deprivation, pituitary hormone profile including growth hormone, prolactin, luteinizing hormone, follicle-stimulating hormone, thyrotropin, cortisol and free T4 were all normal with no clinical evidence of hormonal imbalance. Thoracic and abdominal CT showed no pathology.

MRI was repeated 4 months after presentation; there had been no change. The hormone profile was repeated and was again normal. The patient was taking only simple analgesics. On MRI 1 year later, the stalk was seen to have returned to its normal size and configuration (Fig. 2).

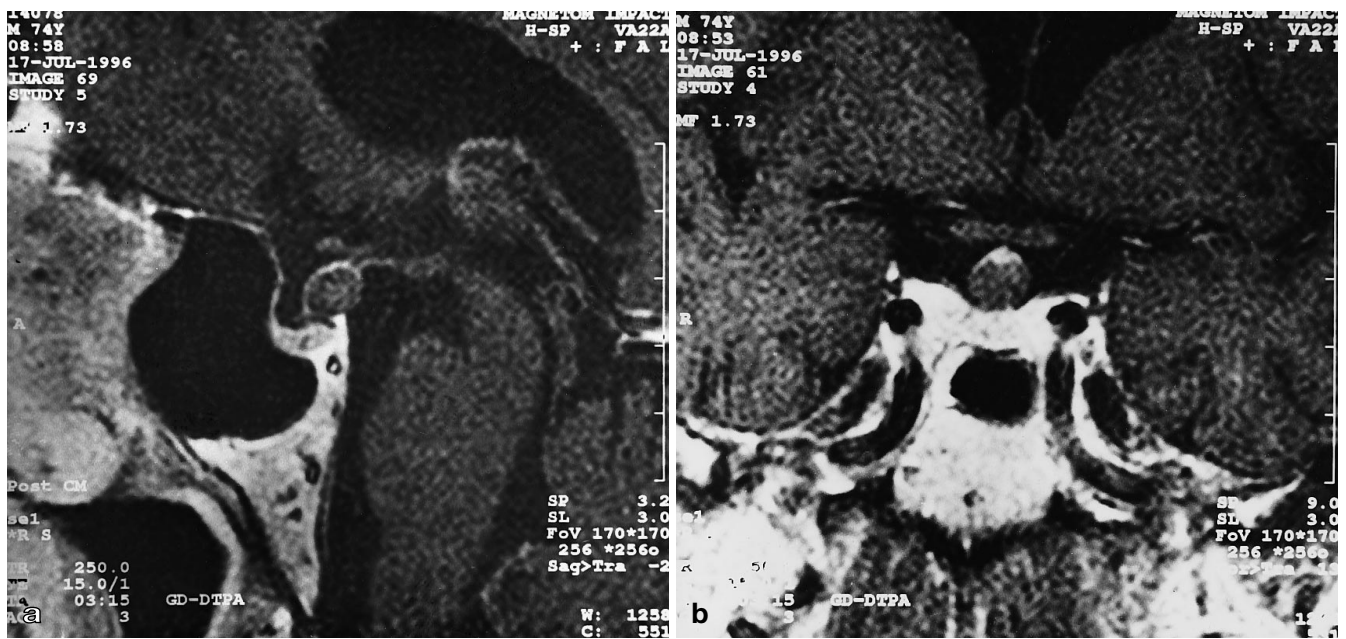
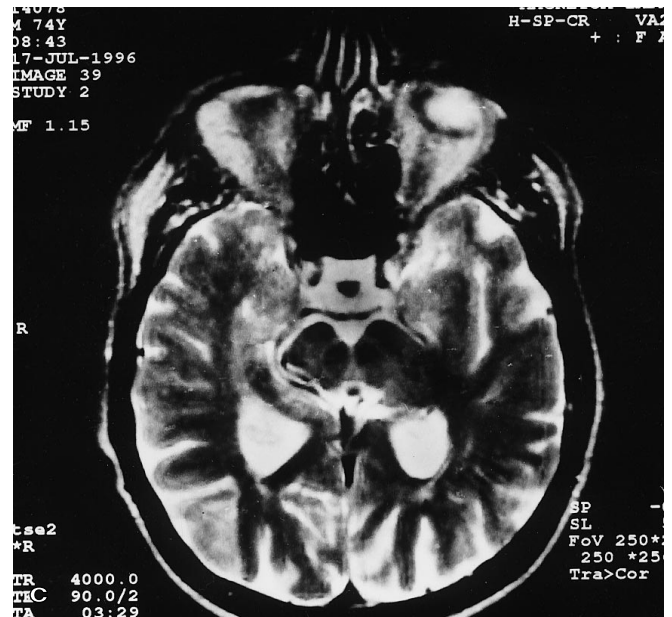


Fig. 1a,b Sagittal and coronal contrast-enhanced T1-weighted images show a nonenhancing infundibular stalk cyst. **c** An axial T2-weighted image shows low-signal from the enlarged infundibulum

Discussion

The differential diagnosis of cysts in the sellar region include Rathke's cleft cyst, cystic pituitary adenoma, dermoid/epidermoid cysts, arachnoid cyst, cystic craniopharyngioma and third ventricle diverticulum [3, 4]. Most of these involve the chiasmatic cistern, the hypophysis, or both. Pituitary adenoma is the most frequent. An adenoma is typically solid, but cysts can form by necrosis or bleeding. Infundibular infiltration may be seen. Craniopharyngiomas are derived from Rathke's pouch and are usually in the suprasellar region [3]. They contain various elements which may cause increased signal on T1- or decreased signal on T2-weighted images [5]. Shibata and Maravilla [4] reported an enlarged pituitary stalk caused by a normal variant, a third-ventricle infundibular diverticulum mimicking a mass in the stalk on MRI. They found a prominent dilatation of the infundibular recess to extend inferiorly into the pituitary stalk, approximately to the level of the diaphragma sellae. Arachnoid cysts are of CSF density and intensity and predominantly suprasellar. They resemble the serous type of Rathke's cleft cyst [6]. The ectoderm derived from the roof of the primitive oral cavity extends superiorly to form Rathke's pouch, which has anterior and posterior walls divided by a central cleft. The anterior proliferates to form the adenohypophysis and pars tu-



beralis, the posterior, the pars intermedia. The intermediate lobe is vestigial, and its remnants line small cystic cavities that are vestiges of the cleft. Rathke's cleft cysts within the sella turcica are thought to arise by expansion of the central cleft secondary to proliferation of epithelial rests. They are lined by ciliated cuboidal epithelial and mucous-secreting goblet cells. Cysts develop due to accumulation of serous or mucinous secretions [7]. Sellar Rathke's cleft cysts are not uncommon autopsy findings, usually asymptomatic and rarely compress surrounding structures; when they do, they may cause diabetes insipidus, hypopituitarism or visual im-

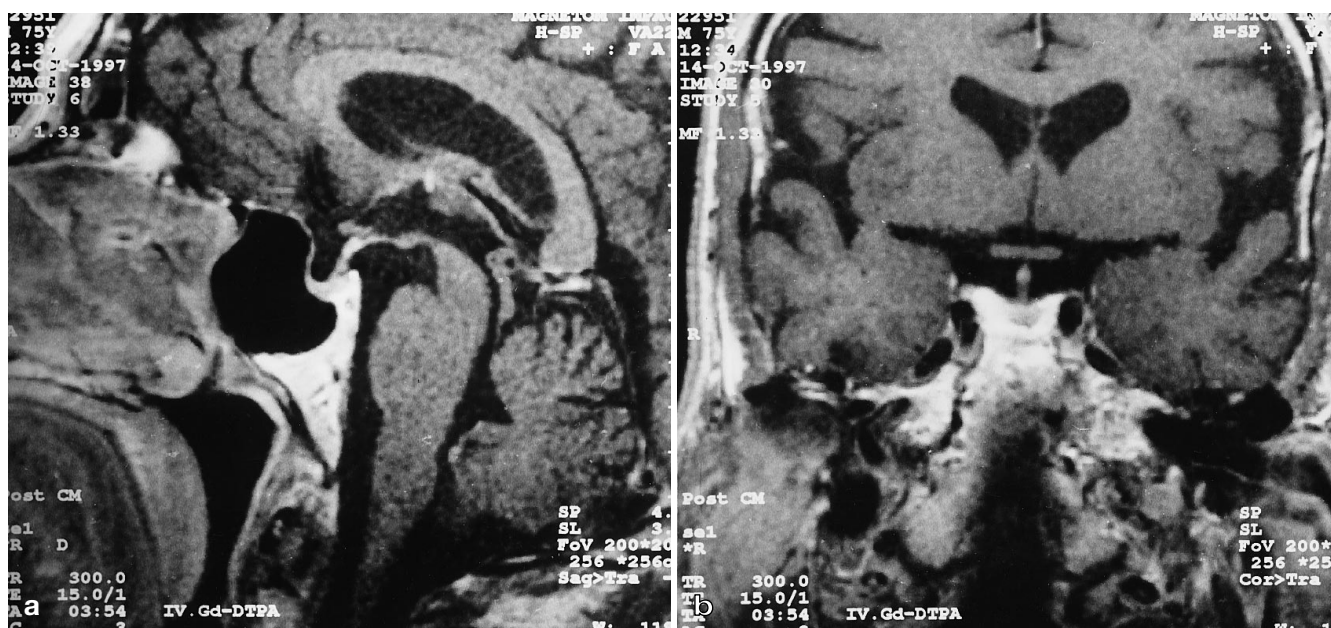


Fig. 2a,b One year later, sagittal and coronal contrast-enhanced images show a normal infundibulum, with total regression of the cystic lesion

pairment. They usually present in adults but do occur in infants and young children [8].

In our case, despite extensive screening no evidence for neoplasia or inflammatory pathology could be found. Since the patient was asymptomatic, MRI was performed for follow-up spontaneous regression of the cyst was observed. We could not find any report of total regression of a cystic infundibular mass without treatment. Simmons and Simmons [2] reported a presumptive Rathke's cleft cyst in the hypophysis, which regressed spontaneously. They thought the fluid in the

cyst was resorbed or the cyst ruptured. There are reports on rupture of Rathke's cleft cysts in symptomatic patients, causing granulomatous hypophysitis [9] and aseptic meningitis [10], documented at surgery. Panagopoulos et al. [1] reported two cases of mucinous cyst of the pituitary stalk confirmed by surgery and suggested that the cysts may be safely observed without intervention, using MRI, unless they increase in size or produce clear-cut symptoms. We presume that this case, although not confirmed surgically or pathologically, represents an asymptomatic ruptured Rathke's cleft cyst. This may be explained by excessive pressure within the cyst secondary to the accumulation of mucinous fluid secreted by the goblet cells. Therefore we propose follow-up of asymptomatic infundibular cysts with serial MRI before deciding on surgery.

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