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Clinical Observations

Pituitary Apoplexy in a Teenager—Case Report

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ABSTRACT

BACKGROUND: Pituitary apoplexy is a rare clinical emergency which results from hemorrhage or infarction in the pituitary gland. **PATIENT:** We present a 14-year-old girl with pituitary apoplexy and review the literature. **RESULTS:** Our patient experienced blurred vision, nausea, and headache. Her best-corrected visual acuity was 20/200 and 20/20. Confrontation test visual field testing revealed bitemporal hemianopsia. Brain imaging demonstrated a suprasellar mass. The microscopic endonasal transsphenoidal approach only found 5-10 mL brownish fluid-like material. Pathology confirmed no malignancy. Pituitary apoplexy was diagnosed. Her nausea and headache gradually improved. Six months after operation, her best-corrected visual acuity had improved to 20/30 and 20/20. **CONCLUSIONS:** Although pituitary apoplexy is rare in pediatric patients, prompt evaluation including detailed ophthalmic examination, biochemical evaluation, endocrine workup, and image study are very important.

Keywords: bitemporal hemianopsia, hemorrhage in the pituitary gland, pituitary apoplexy, teenager

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Introduction

Pituitary apoplexy is a rare clinical emergency that results from hemorrhage or infarction in the pituitary gland.[1-3] It may arise from pituitary tumors,[4] physiological morphologic changes during pregnancy, hypotension after delivery,[5] or medical treatment.[6] This form of apoplexy usually occurs in individuals between 20 to 50 years of age. It affects males more often than females and is particularly rare in the pediatric population. We describe a teenager with pituitary apoplexy without pituitary tumor.

Patient description

A 14-year-old girl experienced blurred vision in the right eye for two weeks accompanied by nausea and headache. She gained approximately 7 kg of weight within 4 days, and polymenorrhea was also noted. Her best-corrected visual acuity was 20/200 in the right eye and 20/20 in the left eye. No elevated intraocular pressure, relative afferent pupillary defect, or disc swelling was observed. Confrontation test revealed bitemporal hemianopsia.

A pituitary gland tumor was suspected. Brain magnetic resonance imaging (MRI) revealed a sellar-suprasellar mass, which appeared as a heterogeneous hypo- and isointense signal on T1-weighted images (Fig 1) and hyperintense contents on T2-weighted images (Fig 2). Brain computed tomography (CT) revealed a 1.5 × 1.8 × 1.8 cm sellar-suprasellar mass with heterogeneous isointense signal (Fig 3). Although craniopharyngioma was suspected initially, results from laboratory examinations including free T4, prolactin, human chorionic gonadotropin, growth hormone, cortisol, α-fetoprotein, and insulin-like growth factor 1 were within normal limits. Therefore, a neurosurgical consultation was sought.

Endoscopic transsphenoidal approach of pituitary tumor resection under navigation assistance was performed but only 5-10 mL brownish fluid-like material was found. Pathology confirmed the absence of malignant cells. Pituitary hemorrhage with apoplexy was diagnosed. Her nausea and headache improved postoperatively. Six months after surgery, her best-corrected visual acuity improved to 20/30 and 20/20.

Discussion

Pituitary apoplexy is potentially life threatening because of acute ischemic infarction or hemorrhage of the pituitary gland.[1,4] Sheehan,[7] in 1938, first described this syndrome in

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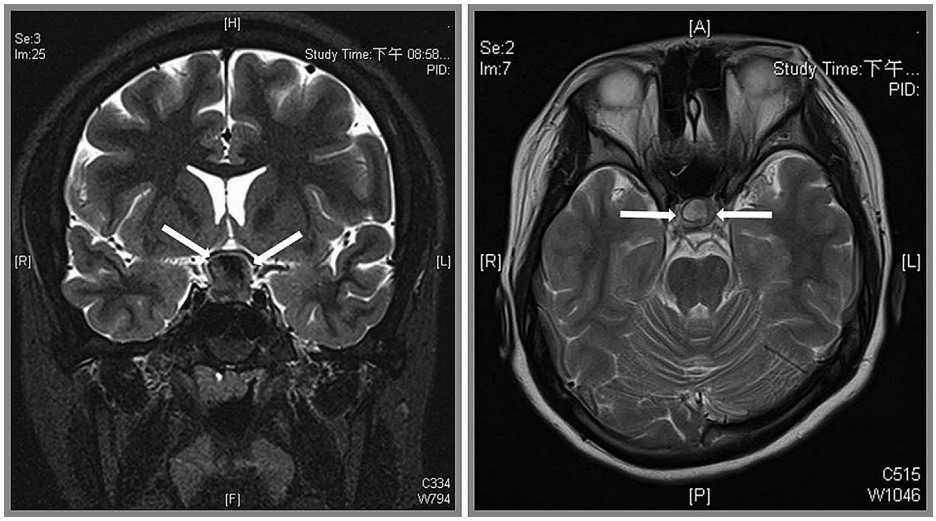

FIGURE 1.
Brain magnetic resonance imaging revealed a sellar-suprasellar mass (arrows) presenting as heterogeneous hypo- and isointense signal on T2-weighted image.

obstetric cases. Brougham,[8] in 1950, coined the term "pituitary apoplexy." It may present as severe headache, visual deterioration, ophthalmoplegia, partial or complete pituitary failure, with or without altered consciousness.[2] Pituitary apoplexy is often misdiagnosed before surgery, and the condition may range from asymptomatic to critical when presenting with visual loss and subarachnoid hemorrhage. Most cases of pituitary apoplexy present in individuals in their 50s and 60s with a slight male predominance.[9] Pituitary apoplexy is rare in the pediatric population, mostly happening in individuals with invasive pituitary adenomas.[4] Our patient, however, is a 14-year-old teenager, and no pituitary tumor was found.

Ranabir and Baruah reported that nearly 80% of patients with pituitary apoplexy have a deficiency of one or more anterior pituitary hormones at presentation, most commonly adrenocorticotropic hormone deficiency.[1] Other abnormalities include growth hormone deficit, hypothyroidism, and hypogonadotropic hypogonadism. Our patient's laboratory examinations were normal, including free T4, prolactin, human chorionic gonadotropin, growth hormone, cortisol, α-fetoprotein, and insulin-like growth factor 1. Timely surgical intervention was considered to prevent the possible deficiency of pituitary hormones.

Typical manifestations of childhood craniopharyngioma are headache, visual impairment, polyuria and/or polydypsia, growth retardation, puberty development disturbances, and significant weight gain.[10] Our patient presented with blurred vision, headache, and weight gain of about 7 kg. Moreover, given that pituitary apoplexy is rare in teenagers, a craniopharyngioma was suspected initially.

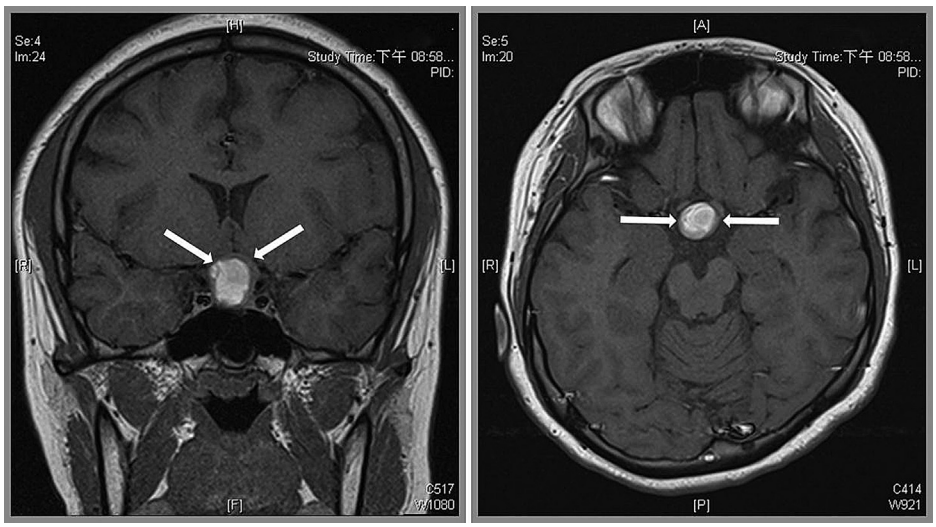

FIGURE 2.
Brain magnetic resonance imaging depicts a sellar-suprasellar heterogeneous hyperintense mass (arrows) on the T1-weighted sequences.