Spontaneous Remission of Acromegaly Due to Apoplexy

Akromegalinin Apopleksiye Bağlı Spontan Remisyonu

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Abstract

Pituitary apoplexy is a rare clinical syndrome characterized by sudden onset of headache and vomiting, accompanied by visual disturbance or ocular motility impairment and pituitary insufficiency. Pituitary apoplexy presenting with these symptoms is seen in approximately 3% of patients with surgically treated pituitary adenomas. In acromegalic patients, apoplexy can be related to some provocating factors and rarely may be spontaneous. We present the case of an acromegalic patient with spontaneous remission after apoplexy. A 39-year-old male patient had transsphenoidal microsurgery for acromegaly in 1994 but remission was not achieved. After a 10-year period without follow-up, he experienced severe headache, nausea, vomiting, photophobia, and visual disturbance in July 2005 and scheduled an appointment with an ophthalmologist. His complaints ceased spontaneously within weeks. In October 2005, sellar MRI examination revealed a 3x2.5 cm mass of adenomatous tissue with necrosis. On admission to our clinic in November 2005, visual acuity, visual fields, and ocular motility, were normal; but results of laboratory tests revealed panhypopituitarism. He was thought to have apoplexy of a growth hormone secreting tumor, and hormone replacement therapy was initiated for panhypopituitarism. Because his symptoms had regressed, surgery was not considered. On rare occasions, acromegaly spontaneously remits after apoplexy, resulting in improved control of the functional adenoma without surgical intervention. *Turk Jem 2008; 12: 80-2*

Key words: Acromegaly, apoplexy

Özet

Hipofizer apopleksi ani başlayan baş ağrısı, kusma, beraberinde görme bozukluğu, göz hareket kısıtlılığı, ve değişik derecelerde hipofizer yetersizliğin eşlik ettiği nadir bir klinik sendromdur. Klasik semptomlarla prezente olan hipofizer apopleksi insidansı cerrahi olarak tedavi edilen hipofiz adenomlarının yaklaşık %3'ünde mevcuttur. Akromegalik hastalarda apopleksi bazı provokatif faktörlere ilişkili olup, spontan gelişimi nadirdir. Bu olgu sunumunda apopleksiye bağlı spontan remisyon gelişen akromegalik bir olguyu sunmaktayız.

39 yaşındaki erkek hastaya 1994 yılında akromegali tanısıyla transsfenoidal mikrocerrahi uygulanmış, ancak remisyon sağlanamamıştı. Yaklaşık 10 yıl kadar takipten yoksun kalan hastada Temmuz 2005'de baş ağrısı, bulantı, kusma, fotofobi ve görsel bozukluk gelişmiş, göz doktoruna başvurmuş, fakat şikayetleri haftalar içinde gerilemiş. Ekim 2005'de hipofiz MRI incelemesinde 3x2.5 cm ebatlarında, nekrozlu alan da içeren adenomatöz doku tespit edilmiş. Kasım 2005'de kliniğimize başvuran hastanın görme keskinliği, görme alanı ve göz hareketlerini de içeren fizik muayene bulguları normal olmasına rağmen laboratuvar incelemesi panhipopituitarizmle uyumlu idi. Hasta büyüme hormon salgılayan tümörün apopleksisi olarak kabul edildi ve panhipopituitarizm tanısıyla hormon replasman tedavisi başlandı. Görsel ve oküler bozuklukları gerilediğinden apopleksi için cerrahi tedavi düşünülmedi. Sonuç olarak, akromegali apopleksi nedeniyle nadiren ve spontan olarak remisyon gösterebilir, bu durum da bazen cerrahi yöntemle ile kür edilemeyen foksiyonel adenomu kontrol etmeye yardımcı olabilir. *Turk Jem 2008; 12: 80-2*

Anahtar kelimeler: Akromegali, apopleksi

Introduction

Pituitary apoplexy is a rare clinical syndrome characterized by sudden onset of headache and vomiting, accompanied by visual disturbance or ocular motility impairment and some degree of pituitary insufficiency (1). The incidence of pituitary apoplexy presenting with classical symptoms is approximately 3% in the series of surgically treated pituitary adenomas (2). Apoplexy is encountered in macro-or microadenomas and thought to develop along with hemorrhage or ischemic infarction. Rarely, however, it occurs with other adenomatous or nonadenomatous pituitary lesions and an intact hypophysis (3). Apoplexy rarely results

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in spontaneous remission of symptoms in individuals with adenomas secreting hormones, including growth hormone (GH). In the literature, apoplexy in acromegalic patients is often reported to be associated with precipitating factors (4-10). Spontaneous remission, however, is rarely reported (11-13). In this report, an acromegalic patient with spontaneous remission related to apoplexy is reported and discussed in the context of available literature.

Case Report

A 39-year-old male patient was suspected to have acromegaly due to his appearance in 1994. Blood testing revealed a GH of 34 ng/mL. Computed tomography (CT) showed a 2x2 cm mass and some destruction of the sella turcica (Fig. 1). The patient underwent transsphenoidal hypophysectomy in the same year, and the adenoma was surgically removed. The levels of GH were elevated (14.5 ng/mL and 50 ng/mL) in the following year; an oral glucose loading test showed no suppression of GH. A CT scan was performed, and bone destruction and postoperative changes were detected in 1995 (Fig. 2). Treatment with bromocriptine was been started, but the patient took it for only one month. There was no follow-up for 10 years because of patient noncompliance.

In July 2005, he experienced severe headache, vomiting, nausea, photophobia, and visual disturbance, especially in his right eye; he scheduled an evaluation with an ophthalmologist, and a sellar magnetic resonance imaging (MRI) was planned by the ophthalmologist. MRI screening could be performed in October 2005. His complaints spontaneously improved between July and October 2005, but impotence had developed. In the sellar MRI evaluation, a mass 3x2.5 cm with necrosis inside and a rim shaped enhancement around the mass by contrast agent was seen (Fig. 3). On his admission to our clinic, his physical examination revealed acral enlargement, frontal bossing, and prognathism, consistent with acromegaly. The laboratory findings were as follows: glucose level 68 mg/dL (Normal Range [NR]: 60-100), sodium 145 mEq/L (NR: 136-152), potassium 4.3 mEq/L (NR: 3.2-5.2), thyroid-stimulating hormone 0.249 mIU/mL (NR: 0.35-4.9), free T3 1.54 pg/mL (NR: 1.71-3.71), free T4 0.65 ng/dL (NR: 0.7-1.48), follicle-stimulating hormone 2.64 mIU/mL (NR: 1.37-13.58), luteinizing hormone 0.94 mIU/mL (NR: 1.26-10), total testosterone 58.5 ng/dL (NR: 270-1734), GH 0.78 ng/mL (NR: 0.06-5), insulin-like growth factor-1 (IGF-1) 96 ng/mL (NR: 109-284), prolactin 0.66 ng/mL (NR: 2.58-18.12), adrenocorticotropic hormone (ACTH) 17.9 pg/mL (NR: 0.00-46), and cortisol 6.9 µg/dL (NR: 6-19). Panhypopituitarism due to apoplexy was suspected. Rapid ACTH stimulation test was performed, and the cortisol level was 22 µg/dL in the first hour. An insulin hypoglycemia test was then performed; maximal GH and cortisol responses were found to be 0.87 ng/mL and 5.45 µg/dL, respectively, although his blood glucose level decreased to 80 mg/dL. As the basal hormonal profiles revealed typical secondary hypothyroidism and hypogonadism, no TRH and GnRH stimulation tests were performed. A diagnosis of panhypopituitarism was made; steroid, levothyroxine, and androgen replacement treatments were applied.

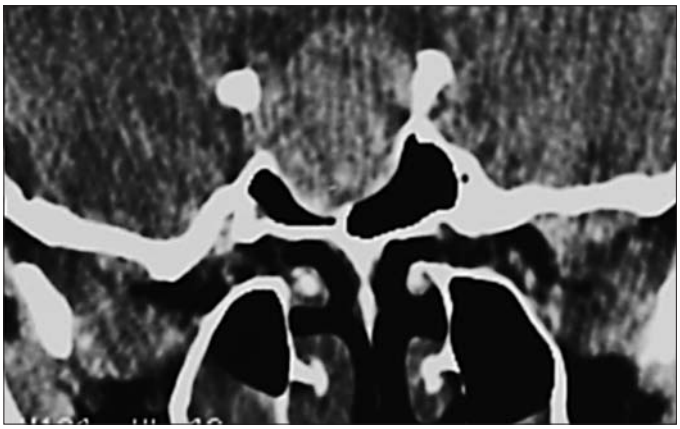

Figure 1. Preoperative CT scan. On coronal image, there is a 2x2 cm mass, with widening and cortical destruction at the sella

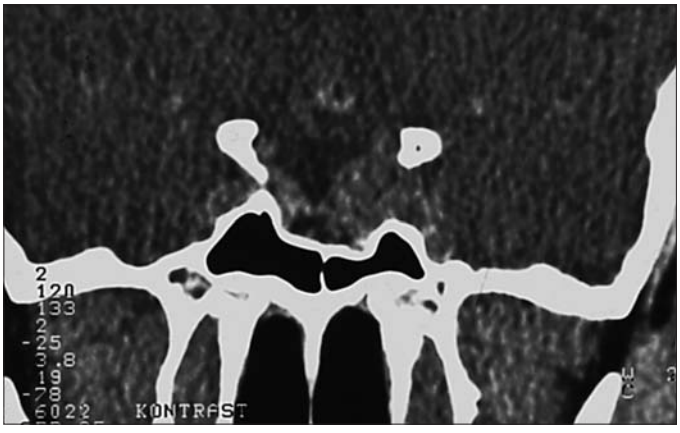

Figure 2. Postoperative CT scan. After transsphenoidal resection of the tumor, there is no mass, but bone destruction remains

Discussion

Classical pituitary apoplexy is a term describing an acute clinical syndrome, characterized by sudden onset of headache, vomiting, and visual and ocular disturbance; the incidence of pituitary apoplexy presenting with classical symptoms is approximately 3% in surgically treated pituitary adenomas (1,2). Asymptomatic pituitary hemorrhage, termed subclinical apoplexy, is more common, and this situation may occur with only isolated hormone deficiency in some patients. The pathogenesis of pituitary apoplexy remains unknown; pathology findings may reveal infarct and/or hemorrhage. In the literature, hypotheses for hemorrhage and ischemic infarction include ischemia caused by rapid growth of an adenoma or compression of the pituitary stalk compromising blood flow and causing blood vessel fragility.

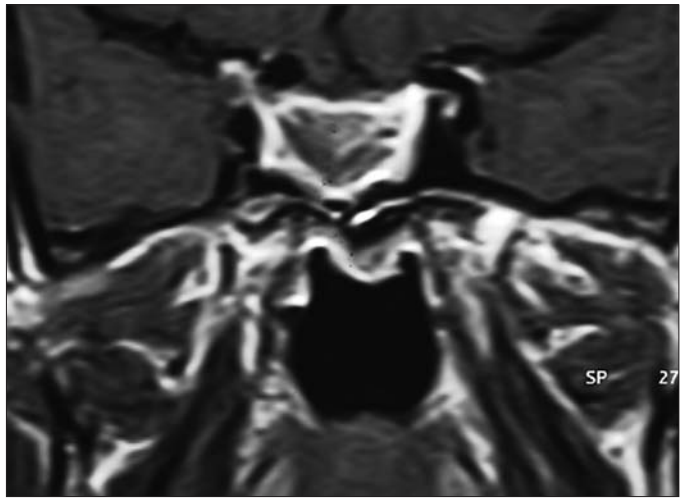

Figure 3. In the 10th postoperative year, there is necrotic appearence of a 3x2.5 cm mass, and peripheral rim shaped enhancement on coronal T1 weighted contrast MR image.

Table 1. Features of acromegalic patients with apoplexy

Authors (ref. no)	n	Possible precipitating factors	Surgery	Hypo-pituitarism	Explanation
Randeva et al (2)	3	Only one case had hypertension	+	-	-
Imaki et al (5)	1	Gastric bleeding	+	-	-
Dokmetas et al (6)	1	TRH/GnRH stimulation test	+	+	The patient died on the 9th postoperative day. GH+PRL secreting tumor.
Kato et al (8)	1	Operated large goiter, hypoxia?	+	-	-
Sibal et al (9)	2	Use of somatostatin analogue in only one case	NA	NA	-
Louwerens et al (10)	1	Cerebral angiography	NA	+	-
Thomas et al (11)	1	No	+	-	-
Nishioka et al (12)	1	No	+	-	-
Elsasser Imboden et al (13)	1	No	+	+	GH+PRL secreting tumor.

NA: Not Applicable; TRH: thyrotropin-releasing hormone; GnRH: gonadotrophin-releasing hormone, GH: growth hormone, PRL: prolactin

Remission of acromegaly following apoplexy has rarely been reported. It has been reported that apoplexy may occur after head trauma (4), gastric bleeding (5), pituitary testing or treatment with hypothalamic hormones or analogues (6) administration of contrast agents (7), thyroidectomy (8), discontinuation of subcutaneous octreotide (9), and cerebral angiography (10) in acromegalic patients. Some cases, however, have no apparent precipitating factors (11-13). The literature on the features of acromegalic patients with apoplexy was reviewed in Table 1. In our case, spontaneous apoplexy due to ischemic necrosis was diagnosed; no precipitating factors were determined.

After apoplexy, hypopituitarism and various endocrinopathies may be observed (9). It is generally accepted that the initial management of pituitary apoplexy consists of careful monitoring of fluid and electrolyte balance, coupled with immediate replacement of deficient hormones (1). Unless glucocorticoid, levothyroxine, and intravenous fluids are replaced properly, apoplexy is often fatal. In our case, the patient's survival was highly interesting in the absence of treatment for panhypopituitarism for 5 months.

The indication and timing of surgery for patients with pituitary apoplexy remains controversial. Many authors have advocated surgical decompression in patients with prominent visual disturbance or neurologic deficits. Surgery may also improve pituitary function (14) as well as visual and neurologic deficits (2,13). Other studies, however, report many cases showing spontaneous recovery with satisfactory results after conservative treatment (15). Sibal et al. reported that there was no statistically significant difference between recovery of pituitary function and visual disturbance in 27 patients who had undergone surgical decompression and 18 who had received conservative therapy after being diagnosed with apoplexy (9). In another study performed by Randeva et al., it was suggested that visual outcome was more likely to be improved in the patients operated on in the first 8 days than those operated on after 8 days (2). In our case, no surgical intervention was considered, as the complaints resolved spontaneously; examination revealed normal movement of the ocular muscles and normal visual fields. The remainder of the neurological examination was also normal.

In conclusion, acromegaly may rarely and spontaneously show remission after apoplexy which may lead to decreased symptoms from adenoma, even without surgery. This may result in ophthalmological and neurological improvement, although panhypopituitarism persists and requires treatment.

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