

Pituitary apoplexy developing during pregnancy: escape from the verge of death

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Summary

Objective: Pituitary apoplexy during pregnancy is extremely rare. Hypofunction of multiple glands due to pituitary hormone deficiency can be life threatening for the fetus and mother. A poorly functioning pituitary gland presents a variety of neurological and endocrinological symptoms, making it difficult to diagnose. The authors present a case of pituitary apoplexy in a 24-week pregnant woman who was not previously diagnosed with pituitary adenoma. **Case Report:** A 26-year-old woman who was 24 weeks into her first pregnancy presented with pituitary apoplexy, which included symptoms of increasing headache, nausea, vomiting, visual disturbances, and hypotensive attacks. With a multidisciplinary approach involving the departments of neurosurgery, endocrinology, gynaecology, and obstetrics, the patient underwent rapid replacement therapy and pituitary tumour excision. Pregnancy ended at the 39th week without any foeto-maternal complication. **Conclusion:** Pituitary apoplexy developing during pregnancy is rare and, difficult to diagnose, and requires a multidisciplinary approach to achieve a successful outcome.

Key words: Pituitary apoplexy; Pituitary neoplasms; Pregnancy.

Introduction

Pituitary apoplexy occurs in 0.6% to 10% of pituitary adenomas, usually as a result of bleeding or infarction of the adenoma [1]. Pregnancy is one of the predisposing factors for pituitary apoplexy [2]. Usually pituitary apoplexy, which occurs suddenly in the second trimester of pregnancy, is characterized by severe headache, changes in consciousness, vomiting, and hemianopsia; it is a condition that threatens the life of the mother and the baby in cases where it is not detected early [3, 4] In this case report, the authors present a case of pituitary apoplexy in a 24-week pregnant woman who was not previously diagnosed with pituitary adenoma.

Case Report

A 26-year-old woman, in the 24th week of her first (singleton) pregnancy, was referred to the neurosurgery outpatient clinic by her family physician because of increasing headache, vomiting, visual impairment, and occasional loss of consciousness over the past 15 days.

Neurological examination was normal except for hemianopsia. Pituitary MRI showed a pituitary macro-adenoma without T1 (longitudinal relaxation time) hyper-intense areas, indicating bleeding in a 20 × 22 × 19 mm³ space that completely filled the cavities (Figures 1 and 2).

Corticosteroid replacement was begun as soon as the diagnosis was suspected due to the attacks of hypotension. Therefore, pre-operative blood cortisol level could not be evaluated.

The department of neurosurgery decided to perform tumour excision. At 25 weeks of pregnancy, according to the last menstrual period, the patient visited the gynaecology and obstetrics outpatient clinic. The obstetrics examination yielded normal results. Ultrasonography revealed a single live fetus that appeared to be of 24 weeks.

Tumour excision was performed with right pterional craniotomy. The tumour was compressing the chiasm of the right optic nerve, and areas of significant bleeding were observed when the tumour capsule was opened. Histopathological findings revealed bleeding and necrotic areas, indicating pituitary apoplexy.

On the 10th postoperative day, adrenocorticotropic hormone level (9.08 pg/mL) was normal (reference 0-46.0 pg/mL), cortisol level (1.6 µg/dL) was low (reference 4.6-22.8 µg/dL), TSH level (0.06 µIU/mL) was low, thyroxine level (1.05 ng/dL) was normal (reference 0.89-1.76 ng/dL), prolactin level (65.3 ng/mL) was normal (reference 9.7-208.5 ng/mL), urine density (1004) was low (reference 1005-1025), blood sodium (124 mmol/L) was low (reference 135-146), and the fluid intake volume was 6,350 mL, and output volume was 6,180 mL per day.

After the operation, the patient consulted the gynaecology and obstetrics clinic again and her pregnancy continued without any problems. The neurosurgery department was consulted while determining the delivery method, and caesarean section was suggested. The patient underwent caesarean operation at week 39.

Discussion

The most common (80%) complaint in pituitary apoplexy cases is a sudden or severe headache with suborbital or diffuse frontal localization with nausea-vomiting and various

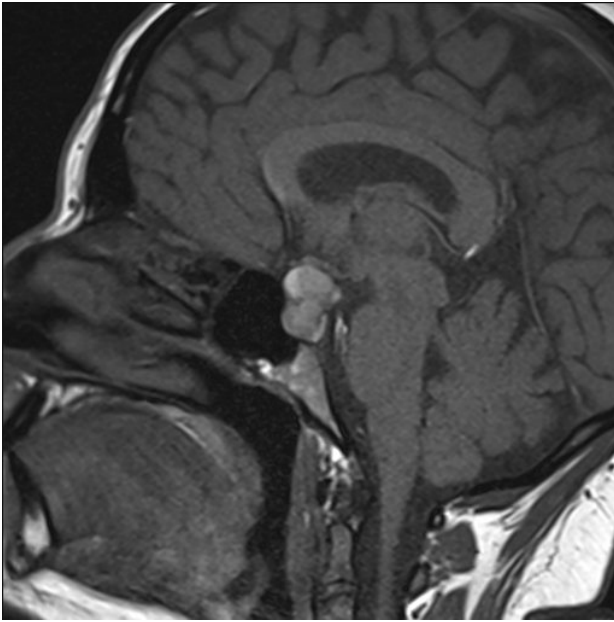


Figure 1. — Sagittal T1-weighted MRI image of the pituitary gland.

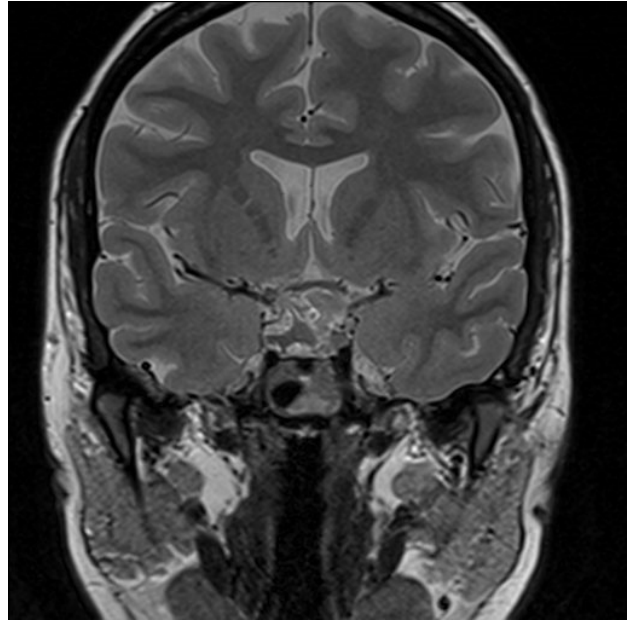


Figure 2. — Coronal T1-weighted MRI image of the pituitary gland.

visual disturbances in 57% of the cases [5-7]. In the present case, the lightning-flashing headache was the first sign that became quite dominant with the onset of nausea-vomiting and bitemporal hemianopsia. Rare findings of pituitary apoplexy, such as photophobia (40% of cases), meningismus (25% of cases), and fever (16% of cases), may result in the condition being misdiagnosed as meningitis, especially in patients without a previous diagnosis of pituitary adenoma [6]. Presence of a headache with nausea and vomiting for 15-days and dominant visual disturbances may have led to an inappropriate referral, particularly if there was not a history of pituitary adenoma. A delay in the diagnosis of pituitary apoplexy, hypotension due to hypocorticotrophic adrenal insufficiency, and hyponatremia may be life-threatening.

Pregnancy is one of the predisposing factors of pituitary apoplexy, but there are few cases in the literature with the association of pregnancy and pituitary apoplexy. Galvao *et al.*, in a retrospective study of pregnant women with pituitary adenoma, reported only two cases of pituitary apoplexy in 35 patients [4]. Galvão *et al.* studied pituitary apoplexy cases at 25 and 28 weeks of gestation [4]. Heide *et al.* and Hayes *et al.* reported cases of pituitary apoplexy found at 23 and 18 weeks of gestation [8, 9]. In the present case, the symptoms appeared in the 24th week of gestation. This may be related to increased hemodynamic and coagulation changes in the second trimester of pregnancy, resulting in increased risk of bleeding or infarct in pituitary adenoma.

MRI without contrast agent is preferred in pregnant patients due to lower radiation load. In this case, MRI revealed a pituitary macro-adenoma that had bled internally, with no evidence of invasion.

Corticotrophic adrenal insufficiency can be seen in approximately 50-80% of pituitary apoplexy cases [5]. In the present 24-week pregnant patient with pituitary apoplexy, corticosteroid replacement was begun as soon as the diagnosis was suspected due to the possibility that the attacks of hypotension could be fatal for the fetus. In the postoperative period, endocrinological functions were restored completely or partially in 50% of pituitary apoplexy cases [2]. On the 10th postoperative day, cortisol and TSH levels were low, and 75 µg levothyroxine and 15 mg hydrocortisone were prescribed to the patient.

Diabetes insipidus is clear in 5% patients with pituitary apoplexy in the acute period and can be masked due to corticotrophic adrenal insufficiency [10]. Postoperative urine density and blood sodium were low, and the fluid intake volume was 6,350 mL, output volume was 6,180 mL per day, and 240 mcg desmopressin (gradually decreased) and Na replacement were prescribed due to diabetes insipidus. The patient was discharged with a diagnosis of temporary diabetes insipidus due to fluid intake of 4,000 cc and 2,950 cc output without desmopressin.

There is no follow-up guide for pregnant women with operated pituitary apoplexy in the literature. Galvão *et al.* reported that the most common indication for non-elective caesarean sections was prolonged delivery [4]. In the present case, this patient underwent caesarean section in the 39th week of pregnancy with the aim of avoiding strain that could increase intracranial pressure. By the tenth postoperative day, the present patient had a healthy baby that was presenting normally and breastfeeding appropriately.

Though rare, pituitary apoplexy should be considered in patients in the second trimester of pregnancy if they are

presenting with hypotension attacks, headaches, and nausea, and vomiting.

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Conflict of Interest

There is no conflict of interest to declare.

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