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Sheehan's Syndrome Presenting with Multiple Hormone Deficiencies: A Case Report

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ABSTRACT

Background: Sheehan's syndrome is a rare condition characterized by pituitary gland necrosis following severe postpartum haemorrhage. We present a case of a 32-year-old woman who developed Sheehan's syndrome after experiencing significant postpartum haemorrhage during delivery. The patient exhibited multiple hormone deficiencies, including adrenal insufficiency, hypothyroidism, and growth hormone deficiency. Prompt recognition and initiation of hormone replacement therapy led to a significant improvement in symptoms and hormonal levels. This case report emphasizes the importance of considering Sheehan's syndrome in women with a history of postpartum haemorrhage presenting with endocrine abnormalities.

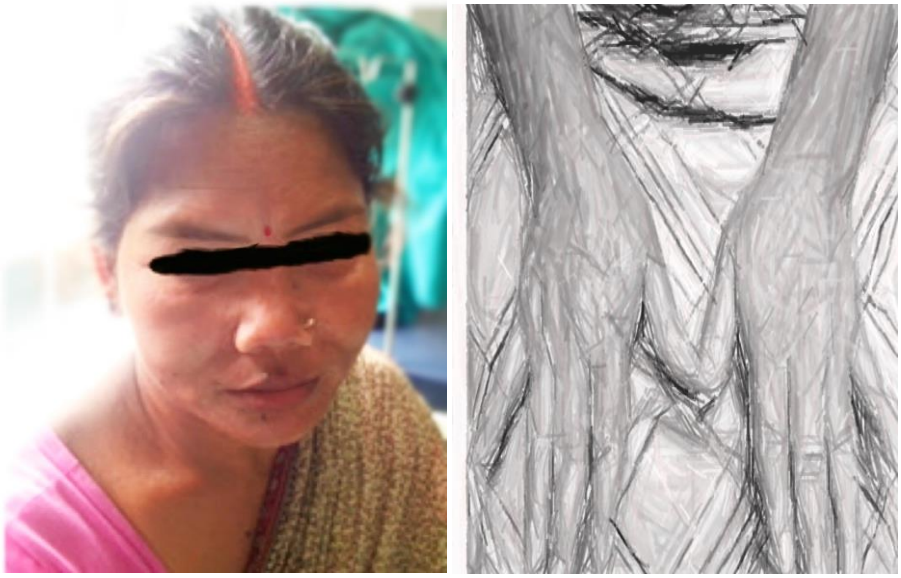
Keywords: Sheehan's syndrome; Hypopituitarism; Postpartum haemorrhage; Adrenal insufficiency; Hypothyroidism; Growth hormone deficiency

INTRODUCTION

Sheehan's syndrome is a rare disorder characterized by pituitary gland necrosis following severe postpartum haemorrhage. The primary cause is an ischemic insult to the pituitary gland due to hypoperfusion during childbirth. This leads to tissue necrosis and subsequent hormone deficiencies. We present a case of Sheehan's syndrome in a patient who exhibited multiple hormone deficiencies and responded well to hormone replacement therapy.

CASE PRESENTATION

A 32-year-old woman, gravida 2, para 1, presented to our endocrinology clinic with a six-month history of fatigue, weakness, weight loss, and irregular menstrual cycles. Her symptoms started after a complicated delivery, during which she experienced significant postpartum haemorrhage requiring a blood transfusion. On physical examination, the patient appeared pale, fatigued and exhibited skin hyperpigmentation. Her blood pressure was low (90/60 mmHg).



a) b)

Figure 1: Clinical findings on presentation and changes with treatment

a) Loss of lateral one-third of the eyebrows at the time of diagnosis.

b) Hands after six weeks of treatment

Laboratory Investigations:

Further evaluation with a pituitary function test confirmed adrenal insufficiency, hypothyroidism, and growth hormone deficiency. Magnetic resonance imaging (MRI) of the pituitary gland revealed an empty sella consistent with the diagnosis of Sheehan's syndrome.

Treatment and Outcome:

The patient was initiated on hydrocortisone replacement therapy for adrenal insufficiency, levothyroxine for hypothyroidism, and recombinant human growth hormone for growth hormone deficiency. Over the course of several weeks, the patient experienced a remarkable improvement in symptoms, including resolution of fatigue, weight gain, and stabilization of blood pressure. Repeat hormone level testing showed normalization of cortisol (14 µg/dL), T4 (1.2 ng/dL), and IGF-1 (220 ng/mL) levels.

DISCUSSION

Sheehan's syndrome is a rare disorder characterized by pituitary gland necrosis following severe postpartum haemorrhage. The primary cause is ischemic insult to the pituitary gland due to hypoperfusion during childbirth. This leads to tissue necrosis and subsequent hormone deficiencies. The diagnosis of Sheehan's syndrome can be challenging, as symptoms may be nonspecific and overlap with common postpartum complaints.

Table 1: Laboratory Investigations at Presentation

Hormone/Parameter	Result	Normal Range
Cortisol (µg/dL)	4	23-Jun
Free T4 (ng/dL)	0.6	0.8-1.8
IGF-1 (ng/mL)	45	97-307
TSH (µIU/mL)	12	0.5-4.5

Table 2: Hormone Levels after Hormone Replacement Therapy:

Hormone/Parameter	Before Therapy	After Therapy
Cortisol (µg/dL)	4	14
Free T4 (ng/dL)	0.6	1.2
IGF-1 (ng/mL)	45	220

In our case, the patient presented with multiple hormone deficiencies, including adrenal insufficiency, hypothyroidism, and growth hormone deficiency. Low morning cortisol levels (4 µg/dL) indicated adrenal insufficiency, which can result in fatigue, weakness, and low blood pressure. The low free thyroxine (T4) levels (0.6 ng/dL) indicated hypothyroidism, contributing to weight loss, irregular menstrual cycles, and fatigue. Additionally, the insulin-like growth factor 1 (IGF-1) levels (45 ng/mL) were below the normal range, suggesting growth hormone deficiency. The elevated thyroid-stimulating hormone (TSH) level (12 µIU/mL) indicated secondary hypothyroidism due to pituitary dysfunction.

Sheehan's syndrome, also known as postpartum hypopituitarism, is characterized by specific findings resulting from pituitary gland necrosis following severe postpartum haemorrhage.

Here are three characteristic findings in Sheehan's syndrome:

1. Pituitary Hormone Deficiencies: Sheehan's syndrome is associated with multiple hormone deficiencies due to the destruction of the pituitary gland. The most commonly affected hormones include cortisol (resulting in adrenal insufficiency), thyroid-stimulating hormone (TSH) (resulting in secondary hypothyroidism), growth hormone (GH)

(resulting in growth hormone deficiency), and gonadotropins (resulting in menstrual irregularities and infertility). The specific combination and severity of hormone deficiencies can vary among individuals.

2. History of Severe Postpartum Haemorrhage: A key characteristic of Sheehan's syndrome is the occurrence of severe postpartum haemorrhage during childbirth. The significant blood loss can lead to hypoperfusion and ischemic damage to the pituitary gland, ultimately resulting in its necrosis. The risk of developing Sheehan's syndrome is higher in women who experience substantial blood loss, especially if it leads to hypovolemia and hemodynamic instability.

3. Delayed Presentation of Symptoms: Another characteristic feature of Sheehan's syndrome is the delayed onset of symptoms, often months to years after the initial postpartum haemorrhage. This delayed presentation can be attributed to the gradual development of pituitary hormone deficiencies as the necrotic pituitary tissue fails to produce an adequate hormonal response. Common symptoms include fatigue, weakness, weight loss, menstrual irregularities, inability to breastfeed, and signs of specific hormone deficiencies, such as low blood pressure in adrenal insufficiency.

These characteristic findings, including multiple hormone deficiencies, a history of severe postpartum haemorrhage, and the delayed onset of symptoms, are indicative of Sheehan's syndrome. Recognizing these features is crucial for prompt diagnosis and appropriate management of this rare endocrine disorder.

Treatment:

The management of Sheehan's syndrome involves hormone replacement therapy to address specific hormone deficiencies. In our case, the patient was initiated on hydrocortisone replacement therapy for adrenal insufficiency, levothyroxine for hypothyroidism, and recombinant human growth hormone for growth hormone deficiency. Over the course of several weeks, the patient showed a significant improvement in symptoms, including resolution of fatigue, weight gain, and stabilization of blood pressure. Hormone levels normalized after hormone replacement therapy (Table 2).

In addition to hormone replacement therapy, patient education plays a vital role in the management of Sheehan's syndrome. Patients should be educated about the signs and symptoms of adrenal insufficiency, the importance of stress dose steroid coverage during illness or surgery, and the need for regular monitoring of hormone levels. Psychological support should also be provided to address the emotional impact of the diagnosis and management of a chronic endocrine condition.[1-6]

CONCLUSION

In conclusion, Sheehan's syndrome is a rare condition that can have significant consequences for affected individuals. This case report highlights the importance of considering Sheehan's syndrome in women with a history

of postpartum haemorrhage presenting with multiple hormone deficiencies. Timely diagnosis and initiation of hormone replacement therapy are critical for restoring hormonal balance and improving patient outcomes. Further research and awareness are needed to enhance the understanding and management of this complex disorder and its long-term implications.

Sheehan's syndrome is associated with various complications, including adrenal crisis, secondary hypothyroidism, and growth hormone deficiency. Timely diagnosis and appropriate management are crucial to prevent these complications and improve the patient's quality of life. Long-term follow-up is necessary to monitor hormone levels, optimize therapy, and identify any additional hormone deficiencies that may arise over time.

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