Sheehan's Syndrome with Dilated Cardiomyopathy: An Overlooked Sequela of Postpartum Hemorrhage

Jabar Imran[1], Shahroze Nayyar[2], Jahanzaib Hamid[3], Iqra Ashraf[4]

Abstract

Summary: We present the case of a 43-year-old female who developed panhypopituitarism as a sequela of postpartum hemorrhage. She manifested with recurrent vomiting, diarrhea, hypotension, and hypoglycemia, and was subsequently diagnosed with Sheehan's syndrome complicated by dilated cardiomyopathy.Prompt initiation of hormonal replacement therapy resulted in remarkable clinical improvement. This case emphasizes the critical need for early recognition of Sheehan's syndrome in women with a history of obstetric hemorrhage, particularly when presenting with chronic, nonspecific complaints, to prevent life-threatening complications.

Keywords: Sheehan syndrome; postpartum hemorrhage; hypopituitarism; dilated cardiomyopathy; heart failure.

Introduction

Sheehan's syndrome is a form of hypopituitarism that occurs as a result of ischaemic necrosis of the anterior pituitary gland following severe postpartum haemorrhage (PPH).[2] The pituitary gland undergoes hyperplasia during pregnancy, making it particularly vulnerable to vascular compromise in the setting of massive blood loss and hypovolaemic shock.[1,2] This condition, first described by Harold Sheehan in 1937, remains a major cause of hypopituitarism in developing countries where maternal health services and emergency obstetric care are often limited.[2,6,5]

The clinical manifestations of Sheehan's syndrome are variable and may appear immediately or many years after the inciting obstetric event. Acute presentations can include failure of lactation, severe fatigue, adrenal crisis with hypotension, and hypoglycaemia.[13,14] More chronic or delayed features include secondary amenorrhoea, loss of axillary and pubic hair, generalized weakness, cold intolerance, alopecia, coarse dry skin, and progressive features of hypothyroidism and adrenal insufficiency. Because these symptoms are nonspecific and evolve gradually, diagnosis is often delayed, sometimes until life-threatening metabolic or systemic complications develop.[2,6,15]

Although endocrine and metabolic manifestations are well documented, cardiac involvement in Sheehan's syndrome is exceedingly rare. Only isolated case reports have described dilated cardiomyopathy (DCM) as a complication.[4,7] The pathophysiology is thought to be multifactorial, involving prolonged untreated hypothyroidism, glucocorticoid deficiency impairing myocardial function, and possible autoimmune mechanisms. Importantly, DCM in this context has been shown to improve with appropriate hormone replacement, suggesting that early recognition and treatment are crucial.[8]

We present a case history of a middle-aged woman of Punjab, Pakistan, who had developed Sheehan syndrome following massive PPH and later on presented with panhypopituitarism, which was complicated by dilated cardiomyopathy.[3,8] The case contributes to the scarcity of the literature on cardiac manifestations of Sheehan syndrome and emphasizes the role of early diagnosis in women who have experienced obstetric haemorrhage and who present.

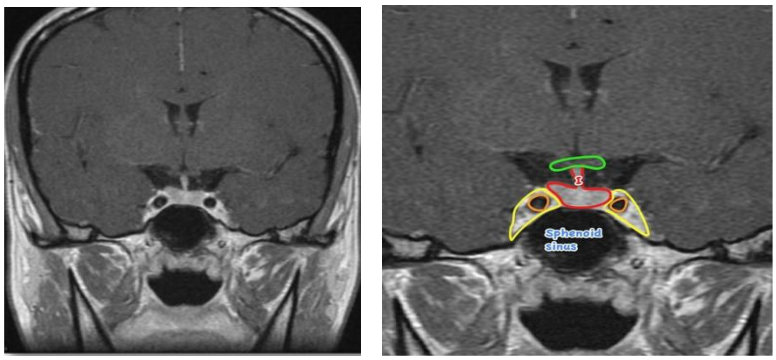

Figure 1: A.B Normal Pituitary Gland(Coronal Images)

Case Presentation

A 43-year-old homemaker, married for 18 years, with no prior medical comorbidities, presented with recurrent vomiting, diarrhea, and abdominal pain of three days' duration. These episodes were associated with dizziness, drowsiness, and symptomatic hypoglycaemia. She also reported cold intolerance, progressive alopecia, reduced libido, generalized weakness, and increasing exertional dyspnoea over the past several years.

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Her obstetric history was significant. She was Gravida 4, Para 4. Her last childbirth in 2013 was complicated by massive postpartum haemorrhage due to delayed placental expulsion. She required intensive care unit admission, surgical evacuation, and transfusion of eight units of red cell concentrated. Although she survived the acute event, she developed secondary amenorrhoea and infertility within two months of delivery, accompanied by progressive fatigue and loss of secondary sexual characteristics.

On examination, her blood pressure was 100/70 mmHg supine and dropped to 80/60 mmHg on standing, with a pulse of 78/minute, low volume. Random capillary blood glucose was 68 mg/dL. Physical features included dry coarse skin, thinning of scalp hair, loss of the lateral third of eyebrows, and bilateral pedal oedema.

Table 1: Baseline Laboratory Investigations

Investigation	Result / Findings
Peripheral film	Microcytic hypochromic anemia
Serum Iron	**48 µg/dL** (Reference: 50–170 µg/dL)
Serum TIBC (Total Iron Binding Capacity)	**184 µg/dL** (Reference: 250–400.9 µg/dL)
Serum Folate Levels	**2.4 ng/mL** (Reference: >3.3 ng/mL)
Serum Vitamin D	**14.6 ng/mL** (Normal: ≥20 ng/mL)
Serum Vitamin B12	270 pg/mL (Reference: 208–964 pg/mL)
Urine routine examination	Normal
Abdominal Ultrasound	Unremarkable
Chest X-Ray	Normal
Serum Cholesterol	**211 mg/dL** (Reference: 125–200 mg/dL)
Serum Triglyceride	127 mg/dL (Reference: <150 mg/dL)
Anti-nuclear antibody (ANA)	Negative
Anti-TTG Ab (IgA)	1 (Reference: <10)
TSH	1.34 µl U/mL (0.3-4.5)
T3	1.15 ng/mL (0.69-2.15)
T4	7.97 ng/mL (52-127)
Prolactin	14.1 µl U/mL (54-490)
FSH	6.18 IU/L (3.03-8.08 IU/L)
LH	1.60 IU/L (1.80-11.78 IU/L)
Serum IGF-1 levels	14.7 nmole/L (18.4-37.12)
Estradiol	55.6 pg/mL (692-1286 pg/mL)
Progesterone	0.394 ng/mL (143 ng/mL)
C-peptide levels (Fasting)	1.9 ng/mL (1.1-5.0)
Serum Insulin (Fasting)	7.5 µl U/mL (5-25)
Serum ACTH (morning)	13.5 pg/mL (7-69)

Table 2: Follow-up Laboratory tests

Laboratory Test	16/11/2022	13/01/2023
WBC	8.5	8.0
Hemoglobin (Hgb)	**11.1**	**11.0**
MCV	76.3	85.3
MCH	29.4	29.9
Platelets	179	364
PT	13	—
APTT	36	—
Urea	**62**	26
Creatinine	**1.3**	0.7
Total Bilirubin	0.6	0.3
ALT	**66**	19
ALP	134	65
Sodium	136	137

Radiological Investigations:

Electrocardiography showed nonspecific T-wave inversions(Fig 2). Echocardiography revealed globally reduced left ventricular contractility with an ejection fraction of 35–40%, while cardiac MRI confirmed dilated cardiomyopathy with biventricular dysfunction(Fig 3). Pituitary MRI demonstrated an empty sella(Fig 4B). Panthytopituitarism was being diagnosed by hormonal tests; the levels of cortisol, thyroid hormones, gonadotropins, oestradiol, and prolactin were reduced. Other laboratory tests, such as renal and liver, were normal.

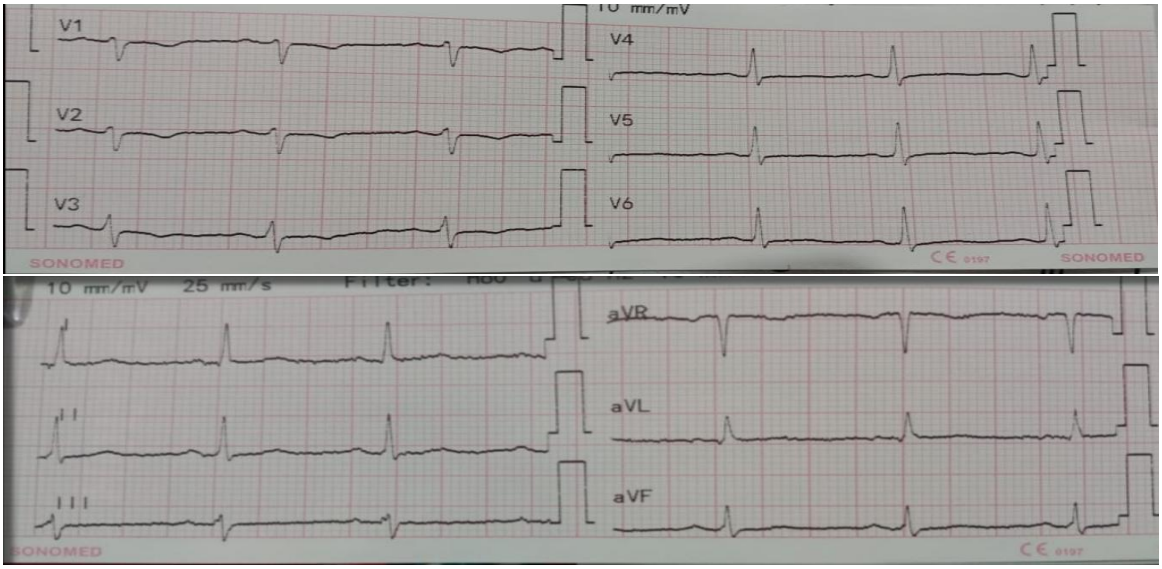

Figure 2: ECG shows normal sinus rhythm with normal axis, intervals, and R-wave progression. Non-specific T-wave inversions in V1–V3 with T-wave flattening in V4–V6 and limb leads

Outcome and Follow-up: Sheehan syndrome, complicated with dilated cardiomyopathy, was diagnosed. Her acute presentation involved stabilization using intravenous fluids and antiemetics. Prednisolone at 7.5 mg/day, levothyroxine at 50 0g/day, and oestrogen-progesterone therapy were started. Social therapy was also administered to support cardiomyopathy. She had recovered her symptoms of fatigue, postural dizziness, and hypoglycaemia on follow-up twice in two weeks. Blood pressure stabilized at 100/70 mmHg, and her thyroid profile normalized. Repeat echocardiography showed improvement in systolic blood pressure. The patient reported a significant improvement in energy, appetite, and mood, with resumption of daily household activities.

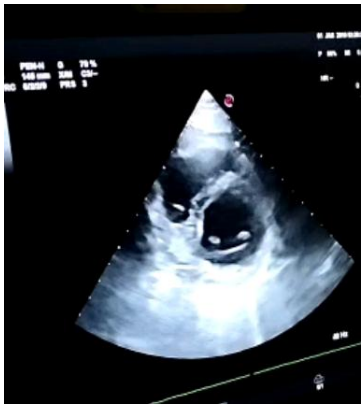

Figure 3: EF 35% -40% Moderate LV systolic dysfunction. Global hypokinesia is present

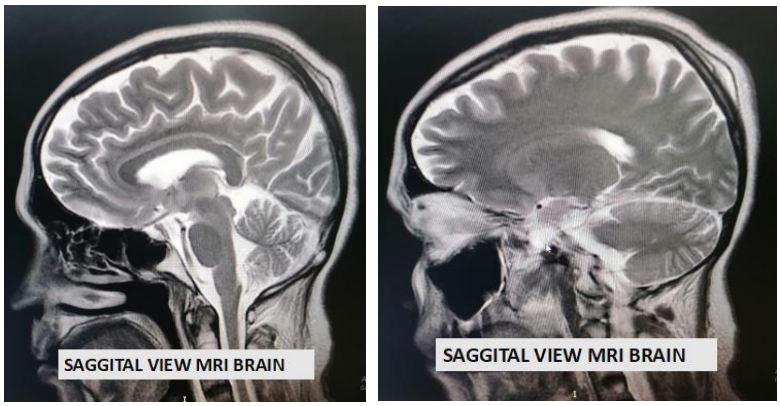

Figure 4: (A) Early — enlarged pituitary with low T1, high T2 homogeneous signal, ring enhancement; (B) Late — empty sella of normal size

Discussion

Sheehan's syndrome remains a frequently underdiagnosed condition because of its insidious onset and non-specific manifestations. Women may present years after the inciting obstetric insult, as in our patient who developed clinical features eight years following a severe postpartum hemorrhage. This delay reflects both the subtlety of symptoms and the lack of awareness among healthcare providers.[2,3]

The endocrine deficiencies in Sheehan's syndrome often present gradually, with amenorrhea, fatigue, and generalized weakness being the earliest indicators.[3,11] Because these symptoms overlap with common post-pregnancy complaints, the diagnosis is easily overlooked. Recognition requires a high index of suspicion, especially in women with a history of complicated childbirth and subsequent menstrual irregularities.

In the present case, the most remarkable feature was the presence of dilated cardiomyopathy. While it is established that hypothyroidism and adrenal insufficiency can impair myocardial contractility, progression to overt dilated cardiomyopathy is unusual. This highlights the potential severity of long-standing untreated hypopituitarism.[7,8]

In Sheehan syndrome, the pathogenesis of cardiomyopathy is most likely multifactorial. Besides direct impacts of thyroid and adrenal hormone deficiency, the autoimmune process has been suggested to be a contributory factor.[12] This intersection indicates that the syndrome Sheehan has could not only be an endocrine disorder, but this syndrome could also have an immunological overlap.

Notably, timely and appropriate hormone replacement has been shown to improve the cardiac performance of such patients, and in some cases, the cardiomyopathy has been reversed.[9,10] This demonstrates the importance of early diagnosis and management of hypopituitarism.

On a larger population health scale, the case highlights the persistence of postpartum hemorrhage-associated morbidity in Pakistan. To avoid the development of long-term complications like the case of Sheehan, it is important to strengthen maternal healthcare services, improve obstetric care, and provide proper follow-up for high-risk women.

Conclusion

The results of the work showed that two weeks of proper hormone replacement therapy resulted in a significant clinical improvement in the patient. Her fatigue, frequent instances of hypotension, and episodes of hypoglycemia were fully cured. The blood pressure leveled at 100 / 70 mmHg without the necessity to use support measures, her thyroid picture was restored to normal levels, which is a clear indication of sufficient endocrine treatment. There was a significant increase in the left ventricular systolic function on follow-up echocardiography, which indicates the recovery of the previously reported dilated cardiomyopathy. The patient also mentioned a major improvement in the overall well-being, such as an increase in the level of energy, the regained appetite, and a more stable mood. All these changes indicate the reversibility of cardiac dysfunction caused by endocrine with early hormone replacement.

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