Journal of Rare Cardiovascular Diseases
ISSN: 2299-3711 (Print) | e-ISSN: 2300-5505 (Online)
www.jrcd.eu

CASE REPORT

Adrenal Crisis in Undiagnosed Sheehan's Syndrome Masquerading as Dengue Shock Syndrome: A Diagnostic Challenge in a Tropical Setting

Pragathi kalapala[1], Hanish Ramu Yelchuri[2], Mithun J[3], Bilal Ismail[4], and Raghavi Ravikumar[5]

[1] Post Graduate, Department of General Medicine Mahatma Gandhi Medical College and Research Institute, Puducherry Sri Balaji Vidyapeeth University Orcid ID: https://orcid.org/ 0009-0001-1536-2122

[2]Post Graduate, Department of General Medicine Mahatma Gandhi Medical College and Research Institute, Puducherry Sri Balaji Vidyapeeth University Orcid ID: https://orcid.org/0009-0000-9412-0406

3Post Graduate, Department of General Medicine Mahatma Gandhi Medical College and Research Institute, Puducherry Sri Balaji Vidyapeeth University Orcid ID: https://orcid.org/ 0009-0000-8340-3363

[4]Post Graduate, Department of General Medicine Mahatma Gandhi Medical College and Research Institute, Puducherry Sri Balaji Vidyapeeth University Orcid ID: https://orcid.org/0009-0004-5851-3885

[5] Assistant Professor, Department of General Medicine Mahatma Gandhi Medical College and Research Institute, Puducherry Sri Balaji Vidyapeeth University

*Corresponding Author
Raghavi Ravikumar

Article History
Received: 04.11.2025
Revised: 26.11.2025
Accepted: 03.12.2025
Published: 24.12.2025

Abstract: Sheehan's syndrome represents a frequently overlooked etiology of hypopituitarism, precipitated by ischemic necrosis of the pituitary gland following severe postpartum hemorrhage. Many affected women remain clinically silent for years until a physiological stressor precipitates acute hormonal decompensation. We describe a 35-year-old woman initially managed as dengue shock syndrome due to pyrexia, thrombocytopenia, and refractory hypotension. Persistently unstable hemodynamics despite aggressive fluid resuscitation prompted further investigation. A retrospective obstetric history revealed massive postpartum hemorrhage, lactation failure, and prolonged secondary amenorrhea, raising suspicion of panhypopituitarism. Magnetic resonance imaging (MRI) demonstrated an empty sella, establishing the diagnosis of Sheehan's syndrome. Endocrine evaluation confirmed secondary adrenal insufficiency and central hypothyroidism, to which the patient responded dramatically following intravenous hydrocortisone. This case underscores the necessity of considering adrenal crisis in atypical shock presentations, particularly among women with a history of obstetric hemorrhage.

Keywords: Sheehan's syndrome; adrenal crisis; dengue shock syndrome; empty sella; hypopituitarism; pituitary necrosis; postpartum hemorrhage; refractory shock; endocrine emergency; hyponatremia.

INTRODUCTION

Sheehan's syndrome, first defined in the 20th century, denotes ischemic destruction of the anterior pituitary gland triggered by severe obstetric hemorrhage and hypotension [1]. Although incidence has markedly declined in well-resourced health systems, the condition persists in developing regions where obstetric complications remain prevalent [2]. The clinical trajectory is often insidious; women may present years later with nonspecific manifestations of hypopituitarism or with a catastrophic adrenal crisis [3]. Infectious illnesses, including dengue fever, may unmask previously undiagnosed endocrine dysfunction [4]. In tropical settings where dengue is endemic, the concurrence of fever, thrombocytopenia, and shock often leads clinicians to prioritize dengue shock syndrome [5]. However, the persistence of hypotension despite adequate resuscitative measures should compel a search for an alternate etiology, including adrenal crisis [6]. This case exemplifies that diagnostic predicament..

Case Presentation

A 35-year-old woman presented with high-grade fever, abdominal discomfort, nausea, and profound weakness for one day. She was previously diagnosed with dengue fever (NS1 antigen positive) and thrombocytopenia. On admission, she appeared pale and febrile with hypotension and tachycardia, accompanied by hypoglycemia. Despite substantial intravenous fluid resuscitation, her hemodynamic instability persisted.

Table 1. Vitals at Presentation

Parameter	Value	Normal Range
Temperature	101°F	<99°F
Blood Pressure	70/40 mmHg	110–130/70–80 mmHg
Pulse Rate	102/min	60–100/min
Respiratory Rate	24/min	12–20/min
SpO_2 (room air)	94%	>95%

Parameter	Value	Normal Range
Capillary Blood Glucose	76 mg/dL	80–120 mg/dL

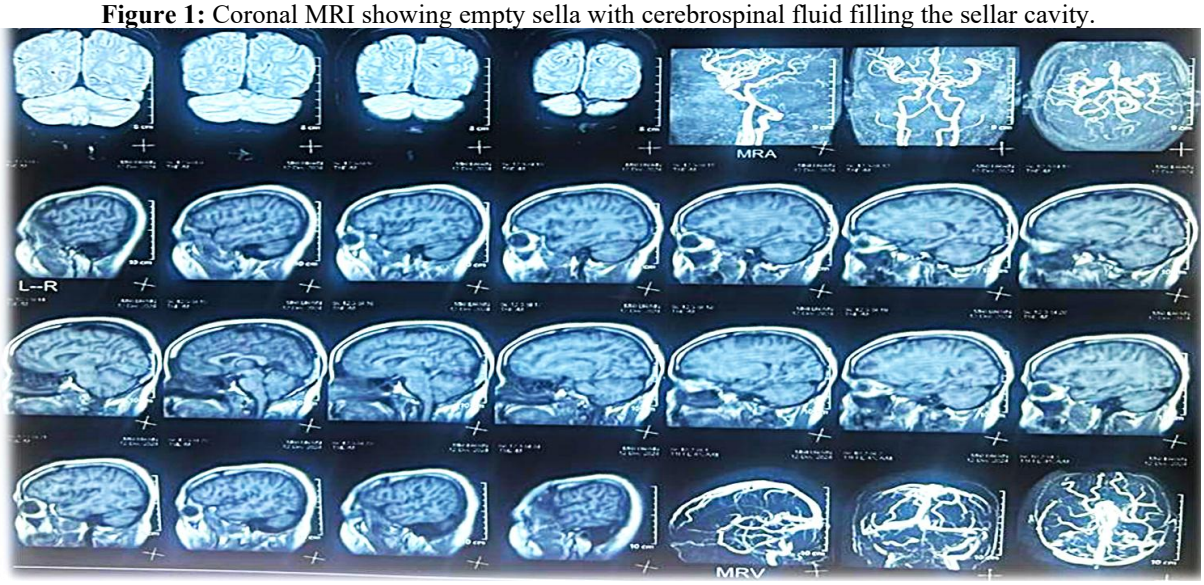
Further probing revealed a history of massive postpartum hemorrhage 10 years earlier, followed by lactation failure and long-standing secondary amenorrhea — strongly suggestive of chronic pituitary dysfunction. Laboratory testing disclosed anemia, hyponatremia, hypoglycemia, markedly reduced serum cortisol, low free T4 with suppressed TSH, and reduced gonadotropins.

Table 2. Laboratory Investigations

Test	Patient Value	Reference Range	Interpretation
Haemoglobin	9.2 g/dL	12–16 g/dL	Anaemia
Platelet count	1.28 lakh/µL	1.5–4.0 lakh/µL	Thrombocytopenia
Sodium	128 mmol/L	135–145 mmol/L	Hyponatraemia
Potassium	4.2 mmol/L	3.5–5.0 mmol/L	Normal
Random Blood Sugar	76 mg/dL	80–120 mg/dL	Hypoglycaemia
Morning Cortisol	2.1 µg/dL	5–25 µg/dL	Low
TSH	0.08 µIU/mL	0.5–5.0 µIU/mL	Suppressed
Free T4	0.42 ng/dL	0.8–2.0 ng/dL	Low
FSH/LH	Low	Age-appropriate	Secondary hypogonadism

MRI brain demonstrated an empty sella with cerebrospinal fluid occupying the sella (Figure 1), and sagittal sequences delineated markedly thinned pituitary tissue draped along the sellar floor (Figure 2).

Figure 1: Coronal MRI showing empty sella with cerebrospinal fluid filling the sellar cavity.



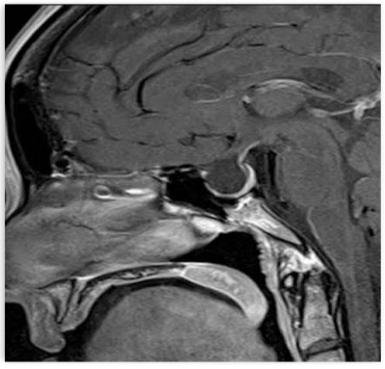


Figure 2: Sagittal T1-weighted MRI showing flattened pituitary tissue against the sellar floor.

Table 3. Timeline of Clinical Events

Day	Clinical Events / Findings	Interventions	Outcome/Response
Day 0	Admission with fever, hypotension, thrombocytopenia	IV fluids (2.5 L crystalloids)	Persistent hypotension
Day 0	History of PPH, lactation failure, amenorrhea elicited	Endocrine evaluation initiated	Suspicion of Sheehan's syndrome
Day 0	Low cortisol, low TSH/T, hyponatraemia	MRI brain performed	Empty sella confirmed
		IV hydrocortisone (100 mg bolus, then 100 mg q8h)	BP improved within hours
Day 1	Symptom improvement	Continued IV hydrocortisone	Stable haemodynamics
Day 3	Symptom improvement	Transitioned to oral prednisolone and levothyroxine	Maintained stability
Follow-up	Endocrinology clinic	Prednisolone, levothyroxine, statins	Symptom-free

DISCUSSION

Sheehan's syndrome continues to be substantially under-recognized because its phenotypic expression may evolve gradually over years, and many women attribute symptoms to normal postpartum changes. A substantial proportion of patients only present when intercurrent stress precipitates an adrenal crisis [7,8]. Dengue infection created further diagnostic ambiguity in this case, as pyrexia, thrombocytopenia, and shock are hallmark manifestations of dengue shock syndrome [9]. The pivotal clinical discriminant is the cardiovascular response: dengue shock syndrome typically improves with vigorous fluid resuscitation, whereas adrenal crisis is distinguished by persistent hypotension despite adequate intravascular volume replacement [10]. The historical triad of postpartum hemorrhage, agalactia, and chronic amenorrhea remains one of the most reliable diagnostic indicators of Sheehan's syndrome [1,6]. MRI demonstrating an empty sella is highly characteristic and often the decisive imaging feature in such patients [11]. Biochemical confirmation of reduced serum cortisol, low free T4 with inappropriately low TSH, and diminished gonadotropins establishes the diagnosis of secondary adrenal insufficiency [12]. Timely administration of parenteral glucocorticoids is lifesaving, and corticosteroid therapy must precede thyroid hormone replacement because initiating levothyroxine alone may exacerbate adrenal crisis due to increased cortisol clearance [13]. Long-term management entails individualized endocrine replacement and surveillance for metabolic comorbidities such as dyslipidemia and osteoporosis [14]. Equally crucial is patient empowerment particularly education regarding dose escalation during physiological stress to prevent future crises [15]. This case highlights the necessity for clinicians in dengue-endemic regions to maintain a broad differential diagnosis and to recognize that infectious presentations can obscure endocrine emergencies if clinical clues are overlooked.

CONCLUSION

Clinicians should consider Sheehan's syndrome in women presenting with unexplained refractory shock — especially if there is a remote history of postpartum hemorrhage. Dengue infection may act as a precipitating stressor for adrenal crisis and complicate diagnosis. Early recognition and glucocorticoid therapy are critical to reducing morbidity and mortality.

Acknowledgements

We acknowledge the contributions of the Department of General Medicine in patient evaluation and longitudinal follow-up.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

REFERENCES

1. Sheehan HL. Post-partum necrosis of the anterior pituitary. J Pathol Bacteriol. 1937;45:189–214.
2. Zargar AH, Singh B, Laway BA, et al. Epidemiologic aspects of Sheehan's syndrome. Fertil Steril. 2005;84(2):523–528.
3. Kelestimur F. Sheehan's syndrome. Pituitary. 2003;6(4):181–188.
4. Shrestha R, Shrestha R, Shakya S, et al. Adrenal crisis due to Sheehan's syndrome. BMC Endocr Disord. 2018;18:15.
5. Guzel A, Sayin MR, Karakus Y, et al. A case of Sheehan's syndrome presenting with shock

mimicking severe sepsis. Case Rep Med. 2012;2012:517687.
6. Lim CT, Kor AC, Lee KO. Adrenal crisis as the presenting manifestation of Sheehan's syndrome. Ann Acad Med Singapore. 1999;28(4):666–670.
7. Sert M, Tetiker T, Kirim S, Kocak M. Clinical report of 28 patients with Sheehan's syndrome. Endocr J. 2003;50(3):297–301.
8. Shivaprasad C. Sheehan's syndrome: Newer advances. Indian J Endocrinol Metab. 2011;15(S3):S203–S207.
9. World Health Organization. Dengue guidelines for diagnosis, treatment, prevention and control. WHO/SEARO; 2010.
10. Allolio B. Adrenal crisis. Eur J Endocrinol. 2015;172:R115–R124.
11. Huang YY, Ting MK, Hsu BR, Tsai JS. Evolving hypopituitarism in Sheehan's syndrome: MRI follow-up. Pituitary. 1999;1(4):243–248.
12. Husebye ES, Pearce SH, Krone NP, et al. Adrenal insufficiency. Lancet. 2021;397(10274):613–629.
13. Bancos I, Hahner S, Tomlinson J, Arlt W. Management of adrenal crisis. J Clin Endocrinol Metab. 2015;100(2):3180–3190.
14. Matsuzaki S, Ueda Y, Tanaka K, et al. Long-term endocrine outcomes in Sheehan's syndrome. Clin Endocrinol. 2007;67(5):723–728.
15. Rushworth RL, Torpy DJ, Falhammar H. Adrenal crisis: Prevention, education, and clinical issues. Clin Med. 2019;19(4):386–389.