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Case Report

Sheehan syndrome presenting as acute renal failure: A rare case report from Somalia

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ABSTRACT

Sheehan syndrome (SS) is one of the most common causes of pituitary gland dysfunction in childbearing women and occurs as a result of ischemic pituitary necrosis due to severe postpartum hemorrhage. Rhabdomyolysis is a pathological condition of the skeletal muscles that can be present in the setting of adrenal insufficiency. It can cause serious end-organ complications such as acute renal failure. The combination of adrenal insufficiency due to Sheehan syndrome, rhabdomyolysis, and acute renal failure is extremely rare in the literature. In this case report, we present a 35-year-old female patient who presented with acute renal failure and was later diagnosed with Sheehan syndrome. She was put on Intravenous fluids, methylprednisolone, and levothyroxine treatment. The patient was hospitalized for 10 days and was discharged in good health.

1. Introduction

Sheehan syndrome (SS) is one of the most common causes of pituitary gland dysfunction in childbearing women and occurs as a result of ischemic pituitary necrosis due to severe postpartum hemorrhage [1]. It was first described in 1937 by Harold Leeming Sheehan [1]. The most common and initial symptom of the disease is the absence of lactation, followed by missing menstrual periods [2]. Adrenal insufficiency and secondary hypothyroidism due to hypopituitarism are common late features seen in patients with SS [3]. Fatigue, weight gain, constipation, bradycardia due to hypothyroidism and hypotension, hyponatremia, hypoglycemia, and electrolyte imbalance due to adrenal insufficiency can be seen in these patients [4]. Rhabdomyolysis due to secondary adrenal insufficiency is very rare in the literature, and most papers advise checking for cortisol deficiency if the cause of rhabdomyolysis is uncertain after the initial workup. SS presenting as acute renal failure is an extremely rare situation.

2. Case report

A 35-year-old, previously healthy woman with no known history of chronic diseases presented to the internal medicine outpatient department with a complaint of a one-week history of nausea, vomiting, and oliguria. She also stated long-standing ill health and easy fatigability for 1 year. On examination, she looked ill and dehydrated. Her vital signs show a pulse of 105 pbm, blood pressure of 90/68, a temperature of 37 °C, and a respiratory rate of 20. She had a dry tongue and bilateral grade 1 lower limb pitting edema was noted. She also had generalized muscle pain in her extremities. Tachycardia was the only prominent feature of the cardiovascular examination. Neurological examinations, including motor, sensory, and cranial nerves, were unremarkable. Her abdomen was soft with no tenderness and no organomegaly. Laboratory evaluations revealed hemoglobin of 13.5 g/dl, AST 562 U/L, ALT 498 U/L, urea of 88 mg/dl, creatinine of 4.3 mg/dl, creatinine kinase (CK) 50488 U/l, and lactate dehydrogenase (LDH) was 584 U/l. pH was 7.34, PCO2 was 33 mm Hg, bicarbonate was 22.4 mmol/l, serum sodium was 108 mmol/l, potassium was 3.72 mmol/l, TSH was 3.34, T4 was 0.01 and plasma glucose was 58 mg/dl (Table 1). The morning cortisol level was 2 mcg/dL. A chest X-ray was normal and an ECG revealed sinus tachycardia. Renal ultrasound revealed mildly increased echogenicity bilaterally. The patient was immediately admitted to the internal medicine ward and further tests were ordered. A hypophyseal MRI was sent and it revealed an empty sella turcica (Fig. 1). The diagnosis of panhypopituitarism most likely due to SS associated with adrenal insufficiency and hypothyroidism was made based on her past medical history, peripheral signs and symptoms of hypothyroidism, and adrenal

Abbreviations: CK, creatinine kinase; SS, Sheehan syndrome.

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Table 1
Laboratory results from presentation to 2 weeks follow-up.

Lab results	Normal range	On admission	Discharge day (day 10)	2 weeks follow up
Hemoglobin (HB)	13–17 g/dl	13.5	14	14
Glucose	60/110 mg/dl	58	86	113
PH	7.35–7.45	7.34	7.35	7.40
PC02	35–45 mmHg	33	36	35
Bicarbonate	22–26 mmol/l	22.4	25	24
Urea	10–45 mg/dl	88	63	40
Creatinine	0.6–1.35 mg/dl	4.3	1.82	0.73
Aspartate aminotransferase (AST)	0–35 U/L	562	114	24
Alanine aminotransferase (ALT)	0–45 U/L	498	138	18
Sodium (Na)	135–145 meq/L	108	132	136
Potassium (K)	3.5–5.5 meq/L	3.72	3.89	4.2
Cortisol	6.4–22.8 mcg/dL	2	11	18
LDH	0-247u/L	584	370	214
LH		0.4		
FSH		2.67		
Myoglobin	0–80 U/L	887	172	43
Creatinine Kinase (CK)	1–24 ng/mL	50488	164	64
Thyroid Stimulating Hormone (TSH)	0.6–5.5 mIU/l	3.34		3.32
T4	0.7–2.1 ng/dl	0.01		4.3

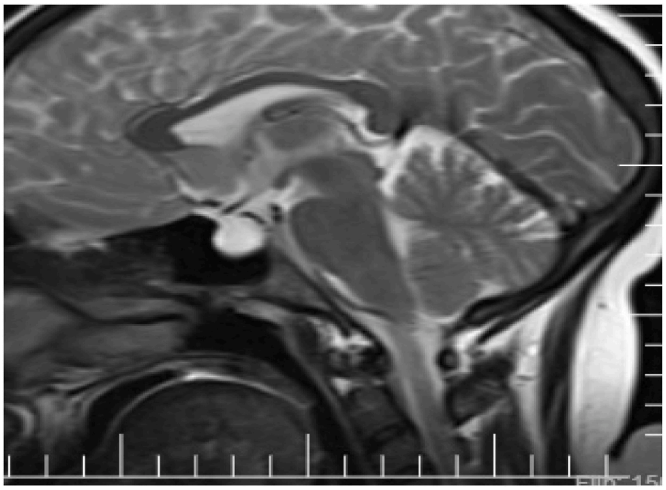

Fig. 1. Sagittal view of pituitary MRI showing pituitary fossa filled with cerebrospinal (empty sella).

insufficiency. Acute renal failure was caused by rhabdomyolysis, which itself was caused by hyponatremia due to adrenal insufficiency. The patient was started on intravenous fluids with close monitoring of urine output, antiemetics, 3% hypertonic solution, and methylprednisolone 80mg per day. After 3 days of adrenal replacement therapy, levothyroxine 25 mcg was started and gradually increased to 50 mcg to prevent intolerance. The patient's urine output started to increase gradually, her renal function test started to improve, her creatinine kinase level (CK) decreased, bilateral lower limb edema and muscle cramps also improved along with her overall condition, and she was discharged on the 10th day of admission. After two weeks, the patient presented with a normal renal function test. Her CK returned to normal, and her thyroid function test and cortisol level also improved.

3. Discussion

Sheehan syndrome is the most common cause of hypopituitarism in developing countries, and its prevalence in those countries is much higher than in developed countries [5]. The incidence of SS is thought to be five out of 100,000 births [1]. The most common initial symptom of the syndrome is the failure of lactation [6]. Lactation failure in postpartum women should be investigated for SS because an early diagnosis can improve the patient's prognosis.

Rhabdomyolysis is a pathological condition related to the release of skeletal muscle contents into the bloodstream, and these toxic materials could cause a range of symptoms from mild muscle pain to end-organ failure [7]. Rhabdomyolysis is generally diagnosed when the serum CK level is greater than 10 times the upper limit and can be a result of traumatic or non-traumatic insults [8,9]. The non-traumatic causes of rhabdomyolysis include electrolyte imbalance, which in our case report resulted from adrenal insufficiency. In the presenting case report, our patient came with acute renal failure symptoms caused by rhabdomyolysis due to hyponatremia and adrenal insufficiency.

Our patient responded well to hormonal replacement therapy and intravenous rehydration and did not need any renal replacement therapies during her hospitalization. In contrast to our study, a study done by Soltani and co-workers presented a case of a 46-year-old woman who presented with acute renal failure with Sheehan syndrome and rhabdomyolysis. They stated that their patient needed 3 sessions of hemodialysis to recover from acute renal failure, while our patient did not need any hemodialysis sessions [10]. In 2019, Kennedy and co-workers presented a case of a 55-year-old woman who presented with rhabdomyolysis secondary to adrenal insufficiency [11]. In contrast to the present case, they stated the cause of adrenal insufficiency was autoimmune hypophysitis related to autoimmune hepatitis, while in our case the cause of hypopituitarism was SS secondary to postpartum hemorrhage.

4. Conclusion

This Sheehan syndrome case presented as an acute renal failure is the first case reported from Somalia. This is a rare combination of SS and can be misdiagnosed in the clinical setting especially in the underequipped health system countries like Somalia. Hence, the clinicians and healthcare givers should be aware of these combinations to improve the patient's outcome.

Ethical approval

Mogadishu-Somali Turkish Training and Research Hospital ethics committee waived approval for this case report.

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Author contributions

All authors contributed to this manuscript substantially whether the conception, it's drafting, and revising the final manuscript.

Registration of Research Studies

- Name of the registry: NA
- Unique Identifying number or registration ID: NA

- Hyperlink to your specific registration (must be publicly accessible and will be checked): NA

Consent

Written informed consent was obtained from the patient to publish the details in this case report anonymously.

Guarantor

As a corresponding Author I, Mohamed Osman Omar Jeele, confirm that the manuscript has been read and approved by all named authors.

Declaration of competing interest

The authors declare that they have no competing interest.

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