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CASE REPORT

PANHYPOPITUITARISM DUE TO SHEEHAN'S SYNDROME IN A PATIENT WITH RECURRENT HYPONATREMIA: CASE REPORT FROM NEPAL

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ABSTRACT

Introduction: *Panhypopituitarism, deficiency of all pituitary hormones (anterior pituitary hormones: adrenocorticotropic hormone, thyroid-stimulating hormone, luteinizing hormone, follicle-stimulating hormone, prolactin, growth hormone; posterior pituitary hormones: oxytocin, vasopressin). Sheehan's syndrome also known as postpartum hypopituitarism is one of the causes of panhypopituitarism, which is characterized by hypopituitarism due to necrosis of pituitary gland secondary to massive postpartum hemorrhage. In this case, a 50 years female presented with the history of vomiting and loss of appetite since 2 years with severe hyponatremia, and decreased pituitary hormones levels in laboratory findings with significant obstetric history is diagnosed with Sheehan's Syndrome.*

Keywords: *Chronic Severe Hyponatremia, Panhypopituitarism, Sheehan's Syndrome*

INTRODUCTION

Panhypopituitarism is the deficiency of all pituitary hormones that can have variable presentation based on the hormones involved, and Sheehan's syndrome is one of the causes of panhypopituitarism.[1] Sheehan's syndrome is due to the necrosis of pituitary gland, caused by the massive postpartum hemorrhage leading to impaired blood supply to the gland. Symptoms usually become evident years after delivery, but in rare cases develop acutely.[2]

Diagnosis of Sheehan's syndrome can be made based on the following criteria:history of severe postpartum hemorrhage, severe hypotension or shock that needs blood transfusion or fluid replacement, failure of postpartum lactation, no menstruation after the delivery, hypopituitarism that can be partial or complete and radio-imaging (Computed Tomography Scan or Magnetic Resonance Imaging) finding of empty sella.[3]

Patient with Sheehan's syndrome presents with variable symptoms of panhypopituitarism, vomiting, loss of appetite, generalized weakness with hyponatremia due to adrenal insufficiency[4], hypothyroidism or hypovolemia and anemia. Hyponatremia may be acute (<48 hours duration), or chronic (>48 hours duration); mild (130-134 mEq/L), moderate (120-129 mEq/L) or severe (<120 mEq/L).[5]In our case patient (Fig. 1) presented with the episodes of hyponatremia since 2 years.

CASE SUMMARY

50 years/Female, married, menopause (10 years back), Hindu, home-maker, without any co-morbidities from Rautahat, Nepal presented in National Medical College & Teaching Hospital (NMCTH), Birgunj; emergency with complaints of:

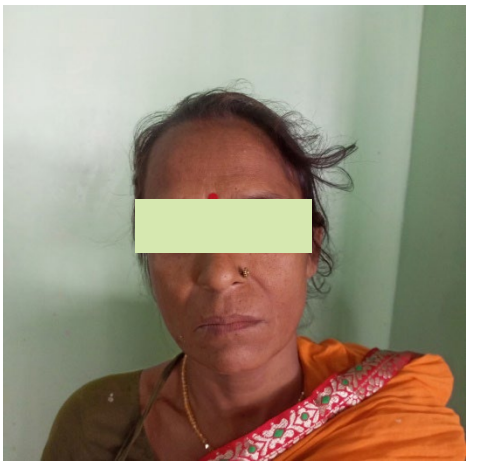

Fig. 1: Patient with Sheehan's syndrome.

- Vomiting for 2 years
- Loss of appetite for 2 years
- Alter sensorium for 1 day

According to the informant, patient was apparently well 2 years back, when she developed vomiting, non- projectile, non-blood stained, non-bile stained, multiple episodes, initially twice to thrice a week in first 6 month, but the frequency has increased to 4-6 times a week in another 6 months, amount equals to a size of cup, i.e., ~100-250 ml each episodes, containing ingested food particles. She visited different local hospitals, 8 hospital admissions in 2 years,treated for electrolyte imbalance (Sodium ranging from: 114-121mEq/L), took medications, after which the symptoms used to subsided for a weeks to months but used to recur. In last one month, the frequency of vomiting has progressed to such an extent that she used to have vomiting after taking each feeds.There is a history of loss of appetite since 2 years, since the progression of vomiting with the history of generalized body weakness. Patient has developed alter sensorium since last 1 day, not recognizing family members and irrelevant talks.

On General Examination: Patient was ill looking, not oriented to time, place and person. GCS: E4V3M6, Pallor: present.

Vitals: Pulse rate: 79 beats/minute, regular, normal in volume and character, no radio-radial and radio-femoral delay. All peripheral pulses are palpable.

Blood Pressure: 100/60 mm of Hg, right arm, supine position.

Temperature: 98.2 F, right axillary

Respiratory rate: 18 breaths/minute, regular, thoraco-abdominal

Spo2- 97% in Room Air; GRBS: 106 mg/dl

Lab investigations in emergency department are as follows:

Table 1: Complete blood count report

Blood Count	Values	Normal Range	Remarks
Hemoglobin	10.0 gm%	12-15	Low
TLC	6700 cells/Cumm	4,000-11,000	
DLC	N67 (%) L20 (%) M02 (%) E01 (%)	40-70 20-45 02-10 01-06	
PCV	30 %	37-47	Low
MCV	90 fl	76-98	
MCH	31 pg	26-36	
MCHC	34 gm/dl	31-37	
Platelet count	155,000 cells/Cumm	150,000-400,000	

Blood count showed: Normochromic, normocytic anemia (10.0 gm%)

Table 2: Urine Routine and Microscopy Examination

Urine RE/ME	Values	Normal Range	Remarks
Color	Straw		
Appearance	Transparent		
Reaction	5.1	4.6-8	
Albumin	-		
Sugar	-		
Specific gravity	1.010	1.005-1.030	
Pus cells	1-2		
Casts/Crystals	-		

ECG: Sinus Rhythm, Chest X-ray: Normal findings.

Table 3: Electrolytes Findings

Tests	Values	Normal Range	Remarks
Sodium (Na^+)	113 mEq/L	135-150	Low
Potassium (K^+)	4.32 mEq/L	3.5-5.5	
Blood Urea	16 mg/dl	10-45	
Serum Creatinine	0.70 mg/dl	0.6-1.3	

Blood test showed: Severe Hyponatremia (113 mEq/L)

Non-contrast Computed tomography (NCCT)scan was done to find out other cause of alter sensorium.

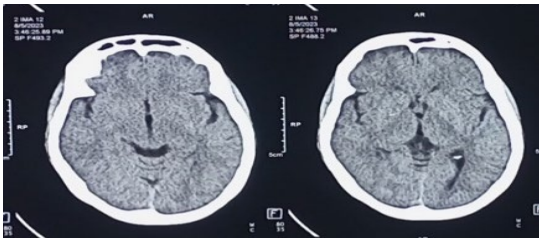

Fig. 2: NCCT Head with mild cerebral atrophy.

Patient was treated with Sodium-Chloride 3% via infusion pump. Alter sensorium (GCS) improved with correction of sodium. Vomiting subsided with anti-emetic (ondansetron) drug. After the patient improved, detailed clinical history and clinical examination was performed. Clinical examination showed no abnormalities in any of the system. Mild pallor was present. Cardiovascular, respiratory, nervous system findings were within normal limit. Urinary sodium investigation was sent as a part of hyponatremia work up, which was high. There was a history of severe postpartum hemorrhage with history of blood transfusion two pint whole blood at the time of delivery of her fourth child 11 years back. Delayed presentation of Sheehan's syndrome was suspected and pituitary hormones immunoassay was performed, that showed panhypopituitarism.

Table 4: Pituitary Hormones Findings

Tests	Values	Normal Range	Remarks
Urinary Sodium (Random)	880 mEq/L	>20 (Random) 40-220 (24 hour collection)	High
Cortisol (8 AM)	1.65 mcg/dl	AM: 8.7-22.4 PM: <10	Low
ACTH (Plasma)	<5.00 pg/mL	<46.00	Low
FSH	6.77 mIU/ML	Post-Menopausal: 16.7-114	Low
TSH	3.709 µIU/ml	0.34-5.6	
FT4	0.220 ng/dl	0.61-1.12	Low
FT3	1.680 pg/ml	2.5-3.9	Low
LH	<0.4	Post-Menopausal: 10.30-65.00	Low
Prolactin	1.6 ng/ml	5.20-27.00	Low
Growth Hormone	0.02 ng/ml	0.1-10	Low

Patient and patient party was counseled about patient status, planned for MRI Brain. MRI Brain screening was done that showed empty sella. Based on history, examination, lab tests and radiological findings the diagnosis of "Panhypopituitarism due to Sheehan's syndrome (hypothyroidism, adrenal insufficiency, hypogonadism, growth hormone deficiency) with recurrent chronic severe hyponatremia with anemia" was established.

Patient was treated with Tablet Hydrocortisone10mg (1 tab at 8:00 am and ½ tab at 4:00 pm. Tablet Levothyroxine was started at 50 mcg daily (1 hour before breakfast). Patient health status was improved and patient was hemodynamically stable. Patient was discharged on oral hydrocortisone and oral levothyroxine and is planned for DEXA scan for bone mass density and initiation of growth hormone therapy in follow up. One month follow up showed no complaints regarding symptoms, hyponatremia, or hormonal therapy.

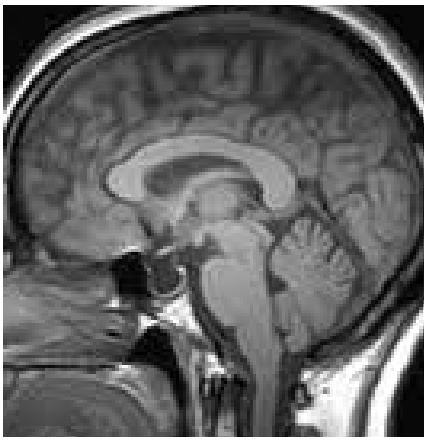

Fig. 3: MRI Brain showing empty sella.

Follow up blood count report showed hemoglobin level 13.0 gm% with normal sodium level (137 mEq/L). Generalized weakness, loss of appetite was improved.

DISCUSSION

Sheehan's syndrome is usually evident years after delivery[2]with variable nonspecific symptoms of hypopituitarism. When there is the necrosis of pituitary gland, there is the progressive deficiency of pituitary hormones. In this case, patient with history of massive postpartum hemorrhage during her last child birth went undiagnosed for 2 years with the recurrence of symptoms even after the supportive management. Patient developed recurrent hyponatremia, anemia (Table. 1) along with clinical symptoms of hormonal deficiencies. Hormonal immunoassay showed panhypopituitarism (Table. 4). Vomiting, hyponatremia that were occurring since 2 years is explained by the adrenal insufficiency[5-7]improved on corticosteroid therapy. Hypothyroidism that is secondary to pituitarydysfunction improved on thyroid replacement therapy. No menstruation following last child birth is due to inappropriate endocrine regulatory system of pituitary.[8]Anemia which is normocytic can be explained by hypothyroidism, adrenal insufficiency, growth hormone deficiencies and hypogonadism that modulate renal erythropoietin production[9,10]Neurological symptom(s) of alter sensorium can be understood as a part of hyponatremia and other hormonal deficiency. Radio-imaging (MRI Brain) investigation that showed empty sella(Fig. 3) due to pituitary necrosis assisted in diagnosis in this patient with such clinical background. Proper counseling about medications use improved the patient compliance of taking medications timely,

improving the overall patient outcome.

CONCLUSION

The diagnosis of Sheehan's syndrome can be delayed due to non-specific and variable symptoms. Appropriate clinical history (including detailed obstetric history), examination, laboratories and radio-imaging investigations help in diagnosis. Initiation of corticosteroids medications, thyroid hormone replacement therapy with other supportive medications improves the patient's symptoms with good outcomes.

CONSENT

An informed and written consent was obtained from the mother for publication.

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