

## Recurrent Life Threatening Hypoglycemia and Hyponatremia- Delayed Presentation of Sheehan's Syndrome

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### **ABSTRACT**

**INTRODUCTION:** Sheehan's syndrome refers to post-partum pituitary necrosis due to excessive intra-partum blood loss resulting in panhypopituitarism. Manifestations of Sheehan's syndrome are a reflection of panhypopituitarism and resulting hormone deficiencies. Although Sheehan's syndrome can have delayed and variable presentations, both recurrent hypoglycemia and hyponatremia are rare presentations and only few cases are reported in the literature. Present case is a rare presentation of Sheehan's syndrome with recurrent life threatening hypoglycemia, hyponatremia and Addisonian crises 10 years after the last delivery. **CASE PRESENTATION:** We report a case of a 45-year-old lady who presented to our emergency with gradual asthenia, easy fatigability since 1 month and altered sensorium due to recurrent hypoglycemia since 2 days. Patient was in shock at presentation and examination revealed features suggestive of hypothyroidism. History revealed loss of menstruation and lactation failure since 10 years after her last delivery. Patient was clinically suspected to be having panhypopituitarism. Biochemical investigations revealed severe hyponatremia, central hypothyroidism and low serum cortisol. Patient's MRI brain revealed empty sella thereby confirming the diagnosis of Sheehan's syndrome. Rapid improvement in patient's condition was seen following institution of hormone replacement therapy. **CONCLUSION:** Present case highlights the importance of strongly suspecting the diagnosis of Sheehan's syndrome in female patients presenting with hypoglycemia, hyponatremia or hypotension irrespective of the time interval from the last delivery, as early treatment can save the patient from life-threatening conditions like hypoglycemia or hyponatremia. Features like central hypothyroidism, lactation failure and loss of menstruation after the last delivery should lead the diagnostic approach towards Sheehan's syndrome as the possible etiology of hypoglycemia and hyponatremia.

**KEY WORDS:** Hypoglycemia, Hyponatremia, Sheehan's Syndrome

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**INTRODUCTION:** Sheehan's syndrome is one of the common causes of panhypopituitarism, usually developing after massive blood loss during delivery leading

to pituitary necrosis. Clinical manifestations are varied and depend on the hormone lost but typically include loss of axillary and pubic hair, dry skin, pallor along with a history of loss of menstruation and lactation failure following delivery. Delayed presentations are not unusual and atypical features like pancytopenia, osteoporosis, hypoglycemia and hyponatremia have been described in the literature developing due to a combination of hormone deficiencies. However, recurrent life threatening hypoglycemia and hyponatremia are rare delayed presentations of Sheehan's syndrome and requires a high index of suspicion for making an accurate and early diagnosis. Since both hypoglycemia and hyponatremia are common clinical problems, a good knowledge of the Sheehan's syndrome as a possible etiology irrespective of the time duration since last child birth can help the clinician to accurately unravel the underlying cause of these abnormalities and early institution of hormone replacement can prove life saving in such cases.

**CASE PRESENTATION:** We report a case of a 45 year-old lady who presented to our emergency with complaints of altered sensorium since 1 day. Patient was well 1 month back when she started developing swelling over the body, listlessness and easy fatiguability and marked asthenia. She developed loss of consciousness one day before presenting to our hospital and was taken to local practitioner where her blood glucose was found to be 1.5mmol/L and she was given concentrated glucose solution intravenously, which led to improvement in her sensorium and she was discharged. Next day, patient developed altered sensorium again and she was brought to our hospital. Patient was a postpartum female and had last delivery 10 years back. Patient gave history of excessive blood loss during delivery and she had lactation failure and loss of menstrual cycles after the birth of her last child. She was apparently well in between till her presentation now. On examination, patient was listless, drowsy and had hoarse voice (Figure1)



FIGURE 1- Appearance of the patient at the time of presentation. Patient appears listless, drowsy, with dry skin, hairs, and facial puffiness and had hoarse voice.

Her vitals were- BP-70 systolic, pulse rate-86/min (feeble) and had cold and clammy extremities. General physical examination revealed dry, rough skin with facial puffiness, brittle and dry hair and was remarkable for pallor, and bilateral pedal edema, however, there was no icterus, cyanosis, clubbing, lymphadenopathy or muco-cutaneous pigmentation. Neurological examination revealed delayed relaxation of ankle reflexes. Cardiovascular, respiratory system and abdomen examination were unremarkable.

Patient's routine investigations revealed Hb- 90 gm/L, Total leucocyte count-  $4.5 \times 10^9/L$ , differential counts- 60% polymorphs, 38% lymphocytes, 2% eosinophils, Platelet counts-  $350 \times 10^9/L$ , Erythrocyte Sedimentation rate( ESR)- 60mm/hr, random blood glucose- 1.92mmol/L. Serum sodium- 118mmol/L, Serum potassium-5.5 mmol/L, total calcium- 2.62mmol/L, phosphorous- 1.13mmol/L. Liver and kidney function tests were normal. Her Chest X-ray, electrocardiographs were normal. Patients pituitary hormone profile

was- TSH-4.5 mIU/L (0.5-4.7 mIU/L), FT3-1.2 pmol/L (3.1-6.8 pmol/L), FT4-3.5 pmol/L (12-22pmol/L) (suggestive of central hypothyroidism), serum cortisol at 8 am was 60 nmol/L (138-690 nmol/L), FSH-3.6 IU/L (3.5-12.5 IU/L), LH-4.5 IU/L (2.4-12.6 IU/L), Prolactin- 102.6 mIU/ml (40-530

mIU/ml). During the hospital stay, patient had multiple episodes of hypoglycemia, despite dextrose infusions. Patient's MRI brain was done which revealed partial empty sella, thereby confirming the diagnosis of Sheehan's syndrome (Figure 2).

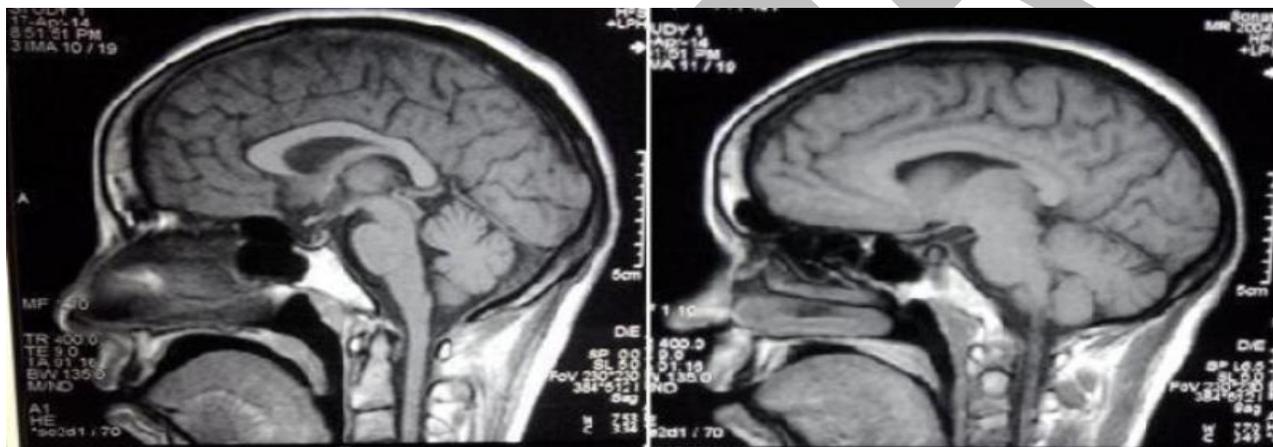


FIGURE 2- MRI brain of the patient showing the partial empty sella.

Patient was managed with intravenous dextrose solutions, hydrocortisone (100 mg intravenously given 8 hourly) and levothyroxine replacement. Patient improved dramatically with normalisation of her blood glucose levels, serum sodium

levels and general appearance within 1 week of starting the treatment and patient was discharged on oral prednisolone and levothyroxine replacement and is still following up in our OPD (Figure 3).



FIGURE 3- Appearance of the patient 1 week after the treatment. Patient's general condition improved markedly with hydrocortisone and levothyroxine replacement.

**DISCUSSION:** Sheehan's syndrome was first described by Sheehan in 1937 and is one of the common causes of panhypopituitarism. [1] Usual mechanism of Sheehan's syndrome is excessive intrapartum or post-partum blood loss leading to hypovolemic shock causing pituitary necrosis. Thrombosis, vasospasm and compression of hypophyseal arteries have been described as other possible mechanisms underlying Sheehan's syndrome. [2] Auto-immunity has been proposed as a possible mechanism in patients without any significant history of blood loss during delivery. [3] Usual presentation of Sheehan's syndrome is the

post-partum acute pituitary failure with loss of menstruation and failure of lactation. However, Sheehan's syndrome presents a diagnostic challenge due to its varied clinical presentations evolving over a varied time span widely ranging from 1 month to 47 years. [4] Common clinical features include loss of axillary and pubic hair (93%), dry skin (82%) and pallor (70%). [5] Other unusual manifestations of Sheehan's syndrome have been reported in the literature including osteoporosis, anaemia, hypoglycemia, hyponatremia, hypotension and pancytopenia. Literature reveals no correlation between the severity of syndrome and disease interval. [4] Empty

sella is a secondary complication of Sheehan's syndrome and presence of pituitary remnant has been inversely correlated with the extent and duration of the disease. [6]

Recurrent hypoglycemia and hyponatremia are less common manifestations of Sheehan's syndrome and are even rarer as delayed presentation. [7] Both hypoglycemia and hyponatremia have been seen acutely in Sheehan's syndrome. [8] Cause of hypoglycemia includes deficiency of counter-regulatory hormones including growth hormone, cortisol and thyroid hormones. Hyponatremia arises as a result of hypothyroidism and adrenal insufficiency.

Our patient presented after 10 years of the last delivery with recurrent episodes of life threatening hypoglycemia and hyponatremia in a state of altered sensorium with adrenal crises. Diagnosis of Sheehan's syndrome was suspected clinically on the basis of past history of post-partum hemorrhage, signs of concomitant hypothyroidism and pituitary hormone profile and was confirmed on MRI brain report revealing partial empty sella.

Rapid improvement was seen following institution of hormone replacement therapy.

Hypoglycemia and hyponatremia are commonly encountered clinical conditions and a high index of suspicion is needed to diagnose Sheehan's syndrome as a possible etiology, irrespective of the time period from the last delivery. Pointers to the early diagnosis include a history of post-partum blood loss, associated central hypothyroidism, loss of menstruation and lactation failure. A study from turkey showed that endocrine deficiency accounts for about 20% cases of hypoglycemia and commonest amongst them being Sheehan's syndrome. [9] Prompt diagnosis with MRI brain and appropriate hormone therapy can reverse the abnormalities and save the patients from life threatening events of hypoglycemia, hyponatremia and Addisonian crises.

**CONCLUSION:** Hypoglycemia and hyponatremia are potentially life threatening disturbances and diagnosis of the underlying cause is of utmost importance for definitive treatment. Sheehan's syndrome should be kept in mind as a possible etiology in females irrespective of time interval from

last delivery and even without any history of excessive blood loss during child birth. Hormone replacement can save the life of patients if the condition is diagnosed and treated timely.

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