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CASE REPORT

Unmasking Sheehan's Syndrome: A Delayed Diagnosis of Postpartum Hypopituitarism

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Abstract

This case presents how a patient with multiple endocrine deficiencies having multiple hormonal and metabolic deficiencies eventually led to the diagnosis of Sheehan's syndrome (a rare condition occurring after postpartum haemorrhage during child birth leading to pituitary apoplexy causing Sheehan's syndrome). A 40year old female patient brought to emergency in an unconscious state with GCS score of 5 having severe hypoglycaemia (BSL 26 mg/dl) on presentation with vitals pulse 58 bpm, BP 80/50 mmHg, and SpO_2 95%. Patient was immediately shifted to ICU and corrected hypoglycaemia. Despite correction of hypoglycaemia the patient remained unconscious following which further evaluation was done suggested severe hypothyroidism with severe adrenal insufficiencies with hyponatremia with meningitis (CSF studies done). After taking detailed history including obstetric history patient relatives gave history of abortion 6 months ago with massive blood loss (PPH). Patient gradually responded to hormonal therapy. To identify the underlying cause, an MRI with contrast performed which revealed Empty Sella Turcica confirming Sheehan's syndrome.

Keywords: Sheehan's Syndrome, Multiple Endocrine Syndrome, Hypopituitarism, Postpartum Haemorrhage, Hormone Replacement Therapy

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Introduction

Sheehan's syndrome is a rare but serious postpartum complication that results from ischemic necrosis of the pituitary gland following severe postpartum haemorrhage (PPH). This condition leads to varying degrees of hypopituitarism, manifesting in multiple endocrine deficiencies. The clinical presentation of Sheehan's syndrome can often be delayed or subtle, making its diagnosis challenging. The affected pituitary gland fails to produce sufficient levels of essential hormones, leading to dysfunctions in the thyroid, adrenal, and gonadal axes. Although a small percentage of patients with Sheehan's syndrome may cause an abrupt onset of severe hypopituitarism immediately after delivery, most patients have a mild disease and go undiagnosed and untreated for a long time. It may result in partial or panhypopituitarism and GH is one of the hormones lost earliest. Hypotension or shock due to massive bleeding during or soon after delivery results in ischemic necrosis of the enlarged pituitary gland during pregnancy, followed by variable degrees of anterior and sometimes posterior pituitary gland dysfunction. The improved obstetrical care decreased the incidence of SS significantly; however, SS should always be kept in mind in the aetiologies of hypopituitarism in women [**Error! R eference source not found.**. The great majority of the patients has empty Sella on CT or MRI [**Error! Reference source not f ound.** In many cases, patients present with symptoms resembling other endocrine disorders, such as Multiple Endocrine Syndrome (MES), where two or more hormonal systems are disrupted [**Error! R eference source not found.**. The clinical manifestations of SS vary depending on the extent of pituitary damage and may include fatigue, amenorrhea, hypoglycaemia, hypotension, and features mimicking other endocrine disorders such as Multiple Endocrine Syndrome (MES) [5]. This overlapping symptomatology makes the accurate diagnosis of Sheehan's syndrome complex, often resulting in misdiagnosis. Common symptoms include fatigue, amenorrhea, failure of lactation, and signs of adrenal insufficiency. Without timely diagnosis and treatment, patients may face life-threatening complications due to the progressive nature of pituitary failure.

This case report explores a patient who initially presented with features suggestive of Multiple Endocrine Syndrome, involving dysfunctions of the thyroid, adrenal, and gonadal systems. However, detailed diagnostic evaluation revealed Sheehan’s syndrome as the underlying cause. This case highlights the importance of considering postpartum endocrine disorders in the differential diagnosis when dealing with multisystem hormonal abnormalities in middle age female patients.

By presenting this case, we aim to raise awareness about the diagnostic challenges posed by Sheehan’s syndrome especially in middle age group following miscarriage/abortion as its differentiation from other endocrine disorders, and the need for prompt recognition and management to prevent further morbidity and mortality.

Case Discussion

We report the case of a 40-year-old Female brought by relatives in a unconscious state with chief complaints of sudden onset irrelevant talk with irrational behaviour followed by sudden loss of consciousness 1-2 hrs ago. Patient was immediately shifted to ICU and blood sugar

level was checked (BSL-26 mg/dl). Dextrose 25% was administered. Patient still remained unconscious following which further evaluation was done. Patient MRI plain suggested cerebral edema. and CSF Analysis indicative of Meningitis. She was treated for the same with osmotic diuretics and Antibiotics and other supportive measures. The patient exhibited persistent bradycardia, recurrent hypoglycemic episodes, and hypotension which prompted us to perform free TFT and serum cortisol levels which were found to be deranged where Free T3 levels came <0.00 pg/ml and Free T4 – 0.26 pg/ml TSH – 3.31 µIU/mL. and serum cortisol – 5.77 µg/dL following which we came to the diagnosis of myxoedema coma for which she was treated with levothyroxine and glucocorticoid to which she gradually started responding. As sudden onset of this condition is rare and concrete cause for the same is still remain uncertain therefore, we repeatedly ask relative for any particular history they are hiding following which they gave history of abortion 6 months ago where she suffered massive blood loss which gave us a clue regarding pituitary cause for same. After which MRI contrast revealed Empty Sella Turcica which gave us a diagnosis of Sheehan's syndrome.

Laboratory investigations

Haemoglobin (Hb) – 10.0mg/dl
Total WBC – 3110 cells/ cumm
PCV – 30.0 %
Platelet count – 185000 / cumm
Serum Sodium – 123 mmol/L
Serum Potassium – 4.2 mmol/L
Serum Chloride – 94 mmol/L

Free TTF

Free T3 - <0.00 pg/ml
FreeT4 – 0.26 pg/ml
TSH – 3.31 µIU/mL
Serum cortisol (8am) – 5. µg/dL

CSF analysis

Macroscopy

Quantity – 1.5 ML
Colour – Clear and Colourless
Appearance – Clear
Cobweb – Absent
Deposit – Absent
Protein – 34 Mg/Dl
Sugar – 104 Mg/Dl

Microscopy

Total nucleated cells – 76 / cumm
(Neutrophils: 34%, Lymphocytes: 65%)
RBCs – 25/hpf
ADA report: 4.21 U/L

Impression: Meningitis

MRI BRAIN (plain + contrast) – EMPTY SELLA TURCICA (Figures 1 and 2).

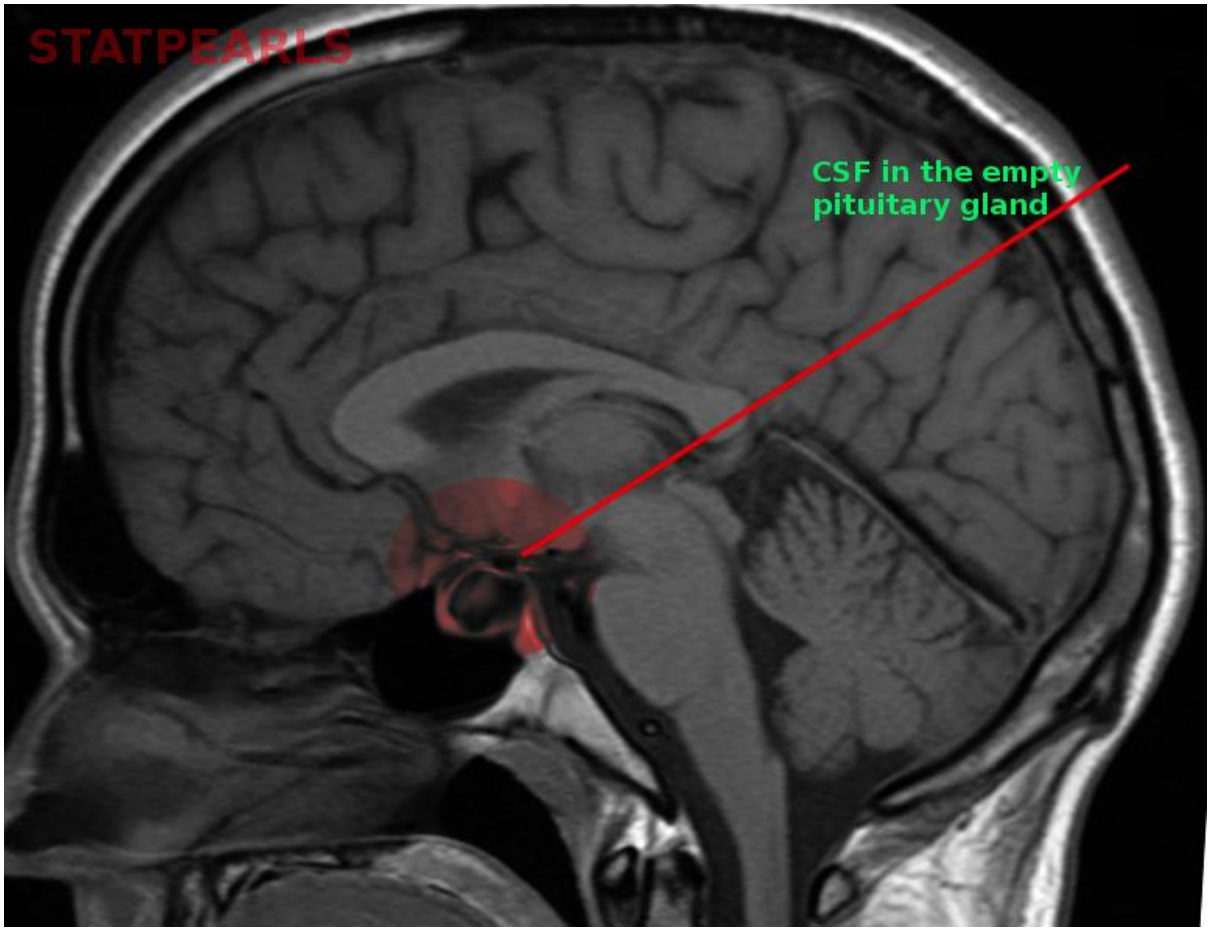

Figure 1. Empty Sella on MRI. Cerebral spinal fluid fills the sella turcica and empty pituitary gland. Image courtesy S Bhimji, MD [9]

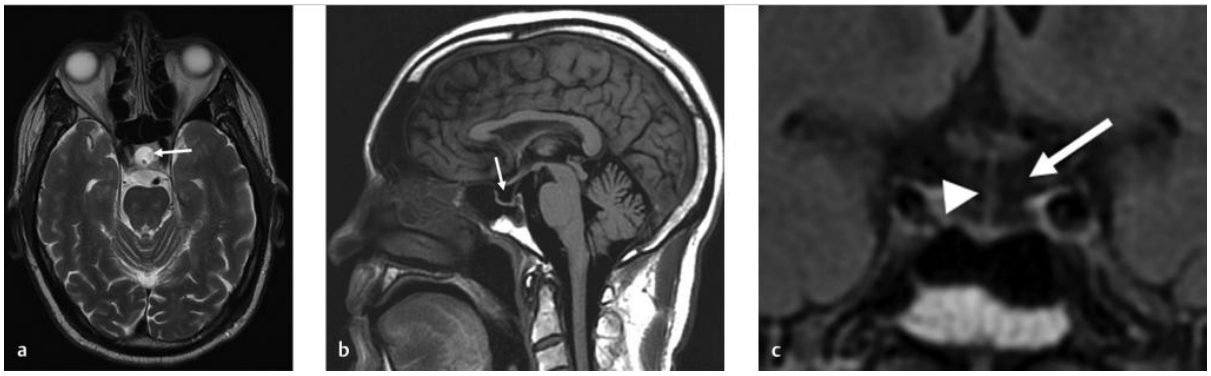

Figure 2 (a-c). Brain MR images without contrast including axial T2-weighted (fig.2-a), sagittal T1-weighted (fig2-b), and coronal fluid-attenuated inversion recovery (FLAIR)(fig2-c) sequences demonstrate an empty sella (white arrows) filled with CSF with nonvisualization of the pituitary gland. However, the pituitary stalk can be visualized (arrow head)

Treatment and Outcome

Patient was treated with levothyroxine and glucocorticoids with other supportive treatment consist of Antibiotics; Antacids; osmotic diuretics; Antiepileptics; Multivitamins; Hormone replacement; IV Fluids; RT feeding etc.

The diagnosis of Multiple Endocrine Syndrome was considered due to the involvement of various hormonal systems and on further investigation, a

detailed obstetric history and pituitary hormone profiling, Sheehan's syndrome was identified as the underlying cause. Magnetic resonance imaging (MRI) revealed an Empty Sella Turcica, confirming the diagnosis. The patient was immediately treated with hormone replacement therapy with glucocorticoids and levothyroxine, leading to significant clinical improvement. patient was discharged with stable vital signs and oriented to time, place, and person.

Discussion

Sheehan's syndrome, also known as postpartum hypopituitarism, occurs due to ischemic necrosis of the pituitary gland following severe postpartum haemorrhage although typically observed in younger women following childbirth, this case highlights its incidence even in middle age female especially following abortion / miscarriage which are usually missed on presentation.

In middle age and elderly women as age progresses the complexity of diagnosing Sheehan's become more difficult due to symptoms such as fatigue, weight loss, reduced mental function, and weakness can be seen in normal aging or other comorbid conditions which are common in older age, like depression or hypothyroidism.

Diagnosing Sheehan's syndrome in the middle age and elderly requires a high index of suspicion, especially in women with a history of severe postpartum haemorrhage or peripartum bleeding and the absence of lactation postpartum, cognitive decline or mental sluggishness which may worsen if left untreated.

The patient's overall quality of life improves significantly when treated with proper hormone replacement therapy and glucocorticoids.

Gonadal hormone replacement is recommended in premenopausal women with Sheehan syndrome, unless there is a contraindication (such as deep vein thrombosis, pulmonary embolism, severe cirrhosis, active viral hepatitis and uncontrolled severe hypertension) [7]. Treatment can be continued until the average age of menopause relevant to that population. Oral oestrogen preparations can lower IGF-1 levels which will be important in patients on GH treatment [8].

Conclusion

This case highlights that the diagnosis of Sheehan's syndrome in middle-aged and elderly women pose diagnostic challenges that can lead to delayed or missed diagnoses especially in those patients who are coming to emergency with severe cases of multiple endocrine disorders and difficulty in getting detailed history including obstetric history. Therefore, even in middle-aged and elderly women presenting with multiple endocrines disorders require thorough evaluation and detailed obstetric history should be taken into consideration to diagnosed Sheehan's syndrome as it is completely manageable and expected good clinical outcome as we can see in this patient with hormone replacement therapy and other supplemental medications. MRI is the diagnostic modality of choice and typically shows partial or complete empty Sella [4]. Early diagnosis and timely hormone replacement therapy are essential to prevent life-threatening endocrine crises and improve outcomes [3].

ABBREVATION:
Glasglow Coma Scale – GCS
Multiple Endocrine Syndrome – MES
Postpartum Haemorrhage – PPH
Intensive Care Unit – ICU
Lumbar Puncture – LP
Thyroid Function Test – TFT
Magnetic Resonance Imaging – MRI

Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

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