CASE REPORT

Recurrent symptomatic hypoglycaemia with pancytopenia as a delayed presentation of Sheehan's syndrome with complete recovery after hormone replacement

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SUMMARY

A 38-year-old woman presented to our hospital emergency section in altered sensorium and with blood pressure of 80/60 mm Hg. She gave a history of recurrent episodes of loss of consciousness for 15–20 days, generalised body swelling and generalised weakness for the past 5–6 years. On further evaluation she was found to have severe hypoglycaemic episodes. In view of history of pregnancy and significant blood loss during surgery and long history of lethargy, asthenia and generalised anasarca, the patient was evaluated for Sheehan's syndrome. Her serum cortisol levels were very low and she was found to have central hypothyroidism. MRI of the brain also revealed small sella turcica and small pituitary gland suggestive of hypopituitarism. The patient was started on high-concentration dextrose drips, steroids and thyroid hormone replacement. The patient showed a marked improvement within 1 week of treatment. And she was discharged with an advice to follow-up at our outpatient department.

CASE PRESENTATION

A 38-year-old woman presented to our hospital emergency in an unconscious state. On examination she had facial puffiness, bilateral pedal oedema and pallor (figures 1 and 2 are the photographs of the patient at the time of presentation and after the hormone replacement, respectively). Her blood pressure was low at 80/56 mm Hg. Cardiovascular and respiratory systems were within the normal limit, on central nervous system examination her Glasgow Coma Scale was low at 9 and she had generalised hyporeflexia with prolonged relaxation. She also had loss of axillary and pubic hairs. Her blood sugar was low at 34 mg%. Blood sample was collected for necessary investigations including random blood sugar, complete blood count and serum insulin levels, and the patient was started on a solution high in dextrose concentration intravenously. The patient regained her consciousness in a few hours. On further evaluation she gave a history of a still birth 6 years ago. At that time

BACKGROUND

Sheehan's syndrome is postpartum hypopituitarism caused by necrosis of the pituitary gland. It is usually the result of severe hypotension or shock caused by massive haemorrhage during or after delivery.¹ Some sources have also attributed autoimmunity to a partially damaged pituitary gland.² The clinical presentation can be acute if the pituitary damage is massive. Failure of lactation and amenorrhoea are the commonest presentations. Adrenal failure, hypothyroidism and hypogonadism are also well known.³ The diagnosis is easy in adult women of reproductive age because of early presentation, concern about body structure, breast size, hair loss and secondary infertility. Hypoglycaemia in Sheehan's syndrome is caused by the deficiency of the growth hormone, adrenal and other counter-regulatory hormones.

Postpartum pituitary necrosis or Sheehan's syndrome is a rare complication of postpartum haemorrhage. In the present scenario, with advanced obstetric care, these complications are now rarely found. There are very few cases reported where a patient presented with severe hypoglycaemic episodes.

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To cite: Dharmshaktu P, Bhowmick J, Manglani D, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-009014

Figure 1 Photograph of the patient before treatment.

Figure 2 Photograph of the patient after 2 weeks of steroid and other hormone replacement therapy.

she was operated and a total abdominal hysterectomy was performed. Indication and the records of the surgery were not available, also the patient did not know much. During the operation she had significant blood loss and she remained hospitalised where she received blood transfusion. Since then she has been having excessive fatigue, malaise, letharginess and facial puffiness with heaviness of voice. For the previous 15–20 days she has been experiencing episodes of transient loss of consciousness.

INVESTIGATIONS

On investigative workup, the complete blood count revealed pancytopenia with haemoglobin 9.2 g%; total leucocyte count 3000/mm³; differential leucocyte count polymorphs 40% lymphocytes

52%; eosinophils 2%; monocytes 3%; platelet count 1.02 lakhs/mm³. Anaemia was normocytic normochromic on peripheral smear examination. The biochemical tests revealed a decrease in total protein to 7.5 g%, with albumin levels of 2.5 mg%. Liver function tests were normal with alanine transaminase/aspartate aminotransferase of 23/32 IU/L and total bilirubin of 0.5 mg%. Serum calcium was 7.5 mg% and phosphate 3 mg%. A provisional diagnosis of postpartum pituitary necrosis with hypopituitarism was made in view of postpartum blood loss and the patient was further investigated. Baseline serum cortisol levels were significantly low at 0.64 µg/mL. Thyroid function test revealed suppressed thyroid stimulating hormone levels at 0.826 with low free T4 at 0.70. The patient was started initially on injectable corticosteroid in view of hypotension and later on oral corticosteroid and thyroid hormone replacement. The patient was also started on oral oestrogen and progesterone preparation as a part of hormone replacement therapy along with calcium and vitamin D supplementation. MRI of the brain was further planned and it revealed small sella turcica and pituitary gland suggestive of hypopituitarism in the sagittal as well as the coronal sections (figures 3 and 4, respectively). So a diagnosis of panhypopituitarism secondary to Sheehan's syndrome was conducted. The patient showed marked improvement in her symptoms. Her facial swelling reduced significantly and her blood counts also showed improvement and normalised. The patient was discharged with an advice to follow-up at the outpatient department (OPD). She visited again 2 weeks later in good condition without any further episodes of loss of consciousness and is on regular follow-up.

DIFFERENTIAL DIAGNOSIS

- ▶ Seizure disorder
- ▶ Pituitary hypofunction
- ▶ Insulinomas leading to recurrent severe hypoglycaemia

TREATMENT

Hypoglycaemia was corrected by giving injectable dextrose containing solutions in higher concentrations. The patient was started initially on injectable corticosteroid in view of hypotension and later on oral corticosteroid and thyroid hormone replacement.

Figure 3 MRI of the brain and pituitary revealing small sella turcica and pituitary gland measuring 7×9×3 mm, posterior bright spot is not well appreciated.

Figure 4 Coronal sections of MRI of the brain and pituitary also revealed small pituitary gland with enhancing infundibular stalk.

The patient was also started on an oral oestrogen and progesterone preparation as a part of the hormone replacement therapy along with calcium and vitamin D supplementation.

OUTCOME AND FOLLOW-UP

The patient improved symptomatically and was discharged on the above treatment with an advice to follow-up at the OPD. The patient has been on regular follow-up.

DISCUSSION

Sheehan's syndrome is the necrosis of the pituitary gland. It is a rare complication of postpartum haemorrhage, first described in 1937.⁴ The pituitary gland is enlarged in size during pregnancy physiologically and is therefore sensitive to the reduced blood flow caused by massive haemorrhage and hypotension. Apart from gland necrosis, other causes demonstrated are umoral, immunological, iatrogenic, traumatic, infectious and genetic.⁴ Patients with Sheehan's syndrome have varying degrees of hypopituitarism, which range from panhypopituitarism to only selective deficiencies.⁵⁻⁷ The anterior pituitary gland is more susceptible to damage than the posterior. Failure to lactate or difficulties with lactation are common initial symptoms of Sheehan's syndrome.⁸ Many women also report amenorrhoea or oligomenorrhoea after delivery. In some cases, the diagnosis is not made until years later, when features of hypopituitarism, such as secondary hypothyroidism or secondary adrenal insufficiency, become evident. A woman with undiagnosed hypopituitarism from Sheehan's syndrome might be relatively asymptomatic initially until her body is stressed by a severe infection or surgery years after her delivery, and she goes into an adrenal crisis. Among radiological investigations MRI is the investigation of choice, but there is little data illustrating postpartum hypophyseal necrosis in the acute phase. In case of hypophyseal necrosis, the early MRI highlights a pituitary gland of reduced size with segments of hypersignal in T1 and T2 and hyposignal without contrast. Later, MRI shows an empty sella turcica following pituitary atrophy.⁹ Hypoglycaemia in Sheehan's syndrome is caused by the deficiency of the growth hormone, adrenal and other counter regulatory hormones. The most frequent haematological finding is anaemia.¹⁰⁻¹¹ Pancytopenia is rarely present in Sheehan's syndrome and demonstrated in only a few case reports. Multiple anterior pituitary hormone deficiencies in Sheehan's syndrome are responsible for pancytopenia and the replacement of thyroid and cortisol hormones results in a complete recovery. Our

patient had hypoglycaemia as well as pancytopenia. Both these features recovered completely with hormone replacement. The association between the hypopituitarism and hematological abnormalities are further supported by a complete reversal in hematological parameters with hormone replacement, both in the case reported as well as in literature.¹²⁻¹⁵ Treatment of young women with hypopituitarism usually includes replacement of hydrocortisone first and then the replacement of the thyroid hormone and oestrogen with or without progesterone. Hydrocortisone is replaced first because thyroxine therapy can exacerbate glucocorticoid deficiency and it may induce an adrenal crisis. Thyroxine replacement as well as gonadotropin replacement are common, and doses are titrated to each individual. The replacement of the growth hormone is necessary in children with hypopituitarism but is controversial in adults. Some people with severe growth hormone deficiency derive great benefit from replacement, but standard recommendations are not available.

In the present scenario with advanced obstetric care Sheehan's syndrome is uncommon in the west but in developing countries cases are still seen. It should be considered in any woman who has a history of postpartum haemorrhage and who reports signs or symptoms of pituitary deficiency.

This case report emphasises the long period of time that may elapse between the postpartum haemorrhage and the clinical presentation with the eventual diagnosis of hypopituitarism along with the rare association of Sheehan's syndrome with pancytopenia.

Learning points

- ▶ Hypopituitarism should always be kept as a differential of recurrent severe hypoglycaemic episodes of unknown aetiology and should be sought after.
- ▶ Other common causes of hypoglycaemia must be ruled out.
- ▶ There should be a high index of suspicion of hypopituitarism per se as a cause for severe hypoglycaemia especially in women with a history of severe blood loss during pregnancy.

Contributors PD wrote the summary of the entire case, JB was the treating physicia, DM was the resident who had taken photographs. DKD is the

endocrinologist who ultimately made the decision regarding diagnosis and treatment.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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