

Case Report

Pancytopenia due to Sheehan's Syndrome

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Abstract: Sheehan's syndrome is hypopituitarism caused by anterior pituitary necrosis due to hemorrhage leading to hypovolemic shock during or after childbirth. We present a case of a 32-year old lady who developed severe post partum hemorrhage after child-birth, eight years back. Since then she has progressively developed symptoms of anemia and now she has presented to us with pancytopenia. Anemia is the most common hematological disorder known to be associated with Sheehan's syndrome, however pancytopenia is rarely reported.

Keywords: Sheehan's Syndrome, Pancytopenia, Hypocellular Bone marrow

Introduction

Sheehan's syndrome is defined by varying degree of anterior pituitary hormone deficiency due to post-partum ischemic necrosis of the pituitary gland following massive bleeding¹. It is still one of the most common causes of hypopituitarism in developing countries where home deliveries are widely practiced and obstetric help is poor, whereas it is responsible for only a minority of cases of hypopituitarism in the developed world^{2,3}. The diagnosis of Sheehan's syndrome may be delayed due to its slow progression^{3,4}. The spectrum of clinical presentation of Sheehan's syndrome is broad, with nonspecific complaints, such as weakness, fatigue, and anemia, to severe pituitary insufficiency resulting in coma and death⁽¹⁾. Although common, anemia associated with hypopituitarism has received little attention⁽²⁾. Likewise, pancytopenia due to hypocellular marrow in these patients is rare and only limited to case reports, possibly because the disorder is not commonly seen in developed countries⁵. Here we report a case of pancytopenia due to bone marrow hypoplasia in a 32-year old lady diagnosed with Sheehan's syndrome.

Case Report

A 32-year old female presented to the medicine department with history of progressive pallor, generalized weakness and easy fatigability for 04 years, mood swings and depression for the last 04 months. A week prior to admission, she had an episode of unconsciousness followed by confusion and disorientation. There was a history of similar episodes of unconsciousness

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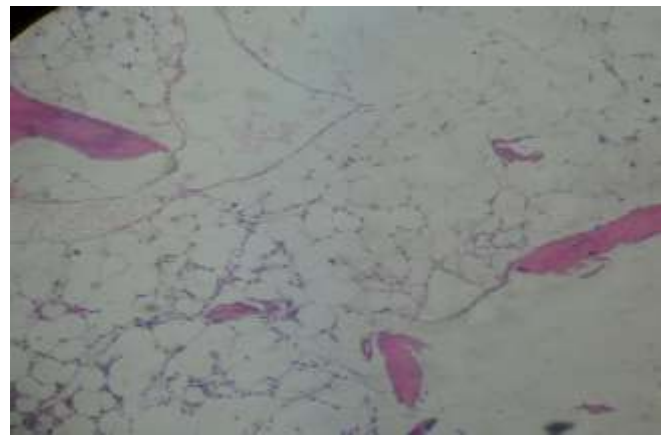


Figure 1. Bone marrow Biopsy at low power: hypocellular marrow (H&E X 40)

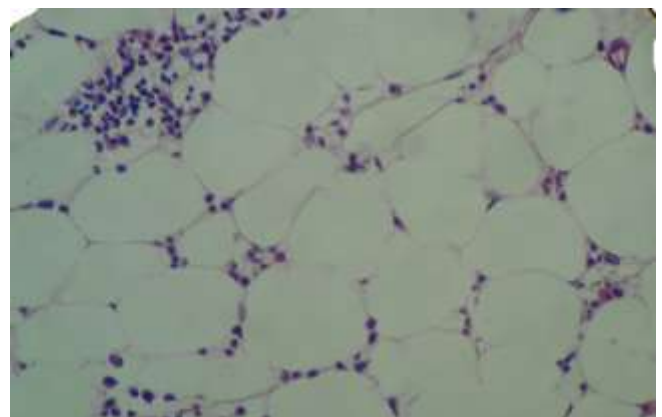


Figure 2 Bone marrow biopsy: markedly hypocellular marrow showing only a few cellular elements and increased number of fat spaces. No abnormal cells seen (H&E X 400) during the past one year. She had no history suggestive of connective tissue disorders or any exposure to poten-

tial drugs or toxins. Examination revealed a pale, lethargic lady with dry skin and non-pitting pedal edema. She had scanty pubic and axillary hair with breast atrophy. There was no hepatosplenomegaly or lymphadenopathy.

Further inquiry revealed that she had developed severe post partum hemorrhage eight years back, after delivery at home, following which she was rushed to the hospital and resuscitated. After that delivery she developed irregular menstrual cycles for four years, followed by complete amenorrhea for the last four years.

Her investigations revealed low Thyroid Stimulating Hormone, low free thyroxine, and low free triiodothyronine, low serum cortisol, low Follicle Stimulating Hormone and low Luteinizing Hormone suggestive of primary pituitary insufficiency.

Clinical picture and hormonal profile were consistent with Sheehan's Syndrome.

Blood Complete Picture showed pancytopenia with Hemoglobin 8.2 g/dl, Total Leukocyte count $2.5 \times 10^3 / \mu\text{l}$, Platelets $112 \times 10^3 / \mu\text{l}$. Red Cell Indices (MCV and MCH) were within normal limits. Peripheral Blood Film revealed Normocytic Normochromic Anaemia. Reticulocyte Count was 0.5 %.

Bone Marrow Aspirate was diluted. The sections of Bone Marrow Trepine showed a hypocellular marrow. (Figure 1 & 2) Megakaryocytes were present. Erythropoiesis was depressed but normoblastic. Myelopoiesis was depressed. No abnormal cells were seen.

Discussion

Sheehan's syndrome, also known as postpartum pituitary necrosis was first reported in 1937 by Sheehan et al who described a case of postpartum pituitary necrosis and insufficiency². It occurs as a result of ischemic pituitary necrosis due to severe postpartum hemorrhage⁸. During Pregnancy, the pituitary gland, especially the anterior lobe physiologically enlarges and the blood supply requirement increases, making it more susceptible to ischaemia^{5, 6}. Vasospasm, thrombosis and vascular compression of the hypophyseal arteries have also been described as possible causes of the syndrome. Also the presence of anti-pituitary antibodies (APAs) has been demonstrated in some patients with Sheehan's Syndrome, suggesting that an autoimmune pituitary process could be involved in this syndrome⁴. Sheehan's Syndrome often evolves slowly with subtle clinical features and hence is diagnosed late⁷. The mean duration between postpartum haemorrhage and the subsequent clinical manifestations has been reported to vary from 1 to 33 years.¹

Anemia is well recognized as a feature of hypopituitarism^{1, 5}. Hormonal deficiencies, such as hypothyroidism,

adrenal insufficiency and gonadal hormone deficiency, or absence of some other yet undefined factors normally secreted from the pituitary, can explain normochromic anaemia in hypopituitarism^{1, 4, 5}. As pituitary hormones modulate the production of erythropoietin, it can be the result of a physiologic adjustment to renal hypoxia^{2, 5}. This is supported by the low erythropoietin levels found in these patients as reported by Gokalp et al. in his study². Cause of pancytopenia in these patients is not understood, but a direct regulatory effect of pituitary hormones on metabolic reactions involved in hemopoiesis has been suggested^{1, 2, 5}.

Fatma et al. reported a 48 year-old lady with a history of post partum haemorrhage twenty-six years back who presented with pancytopenia and hypocellular marrow and on investigation was found to have primary pituitary insufficiency. She was given replacement therapy with Thyroxine and hydrocortisone and six weeks later, complete haematological recovery was noted¹.

Shivaprasad et al. studied forty patients diagnosed with Sheehan's Syndrome who showed haematological abnormalities in the form of anaemia, thrombocytopenia and pancytopenia in 87%, 60% and 15%, respectively. Pancytopenia was associated with hypocellular marrow and complete recovery was shown to occur after achieving eucortisolemic and euthyroid state. Further he also showed that glucocorticoid replacement is more important than thyroxine replacement in reversing pancytopenia in these patients⁴.

Similarly, Laway et al. reported a case series of three patients with Sheehan's Syndrome who were found to have pancytopenia with hypocellular marrow and treatment with thyroxine and glucocorticoids resulted in complete recovery in each case⁵.

The case reported here corresponds to other cases reported in literature emphasizing the unusual association of Sheehan's syndrome with pancytopenia and bone marrow hypoplasia. Health professionals should take preventive measures with vigilant management of post partum haemorrhage especially in our setup, where Sheehan's Syndrome is still prevalent as compared to Western countries. Further, clinicians should be well aware of hypopituitarism as a rare, but treatable cause of pancytopenia, since timely hormone replacement results in complete recovery.

References

1. Fatma M, Mouna E, Nabila R, Mouna M, Nadia C, Mohamed A. Sheehan's syndrome with pancytopenia: a case report and review of the literature. *Journal of Medical Case Reports* 2011; 5:490.
2. Gokalp D, Tuzcu A, Bahceci M, Arikan S, Bahceci S, Pasa S. Sheehan's syndrome as a rare cause of anaemia

- secondary to hypopituitarism. *Ann Hematol* 2009; 88:405-10.
3. Kristjansdottir HL, Bodvarsdottir SP, Sigurjonsdottir HA. Sheehan's syndrome in modern times: a nationwide retrospective study in Iceland. *European Journal of Endocrinology* 2011; 164:349-54.
 4. C. Shivaprasad. Sheehan's syndrome: Newer advances. *Indian JEndocrinol Metabol*2011; 15: S203-S207.
 5. Laway BA, Bhat JR, Mir SA, Khan RS, Lone MI, Zargar AH. Sheehan's syndrome with pancytopenia –complete recovery after hormone replacement (case series with review). *Ann Hematol*2010; 89:305-8.
 6. Park HJ, Kim J, Rhee Y, Park YW, Kwon JY. Antepartum Pituitary Necrosis Occurring In Pregnancy with Uncontrolled Gestational Diabetes Mellitus: A Case Report. *J Korean Med* 2010; 25:794-7.
 7. Tessnow AH, Wilson JD. The changing face of Sheehan's syndrome. *The Am J Med Sci* 2010; 340:402-6.
 8. Dökmetaş HS, Kilicli F, Korkmaz S, Yonem O. Characteristic features of 20 patients with Sheehan's syndrome. *Gynaecol Endocrinol* 2006; 22:279-83.
 9. Gokmen Akoz A, Atmaca H, Ustundaq Y, Ozdamar SO. An unusualcase of pancytopenia associated with Sheehan's syndrome. *Ann Hematol* 2007; 86:307-8.