



Acute Sheehan's Syndrome – An Update

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ABSTRACT

In developing and developed countries that have a fairly high prevalence of mild to serious post-party hemorrhage, Sheehan syndrome (SS) remains a common obstetrical complication. Sheehan's (SS) syndrome is a common cause of postpartum hypophysis associated with hypopituitarism. This is typically the product of severe hypotension or shock-induced during and after delivery by massive hemorrhage. SS patients have different degrees of prior deficiency of pituitary hormones. Several studies have shown that Sheehan syndrome may be several years of the latent duration between symptoms and post-partial hemorrhage.

Keywords: Sheehan's syndrome, postpartum hemorrhage, hypopituitarism

1. INTRODUCTION

Sheehan syndrome (SS), which has still a fairly high incidence of mild to serious postpartum hemorrhage, continues to be recurrent ostracization in developing or developed countries [1]. The total blood loss of 1,000 mL or higher is known as postpartum hemorrhage in the first 24 hours after birth [11]. A severe blood-loss hemorrhage is greater than 3,000 mL [12]. Post-partum hemorrhage may be fatal, but over the last 20 years, hemorrhage mortality has decreased. Harold L. Sheehan first described Sheehan's syndrome (SS), which is a common cause of postpartum pituitary infarction arthritis-related hypopituitarism in 1937 [4]. Although other pathologists, including Glinsky in 1913 and Simmonds in 1914, had documented initially SS cases, they claimed that thrombosis or bacterial emboli in puerperal septal pituitary arteries were the underlying causes of pituitary necrosis found in autopsy studies [4]. SS patients have different degrees of anterior deficiency of pituitary hormone [6].

2. EPIDEMIOLOGY

About 14 million women are estimated to have a post-partum hemorrhage every year (10) as per to the World Health Organization. The post-partum hemorrhage is 1-2% of all live births. The Sheehan syndrome is the furthestmost common cause of hypopituitarism in under-developed or mid-income countries in one of every 100,000 births worldwide [9]. Sheehan's syndrome in developing countries is rare due to advanced obstetric procedures and increased access to trained healthcare providers and medical facilities. Unfortunately, childbirth in developed and low-income countries can be difficult. Few studies have brought up to 5 out of 100,000 births incidence of Sheehan syndrome [10]. Delayed diagnoses are due to a lack of knowledge about the unusual disorder and a fall of focus on postpartum as well as menstrual history during years of following delivery [12] that connect wide spectrum symptomology to the disorder of incompetence.

3. PATHOPHYSIOLOGY

Significant Postpartum Hemorrhage (PPH) causing spasm or thrombosis of the pituitary artery, contributing to hypopituitary disease [4]. Vasospasm, thrombosis along with vascular compression of the pituitary arteries was also reported as potential triggers for OPC. Major PPH, contributing to Hypotension and Hypopituitary Hemorrhage, are the triggers of VPH, and HPC. Extension, low sellar size, intravascular coagulation dissemination, and autoimmunity in the hypophysial gland were suggested as a factor in the SS pathogenesis. SS is renowned through various rates of anterior hypophysis [6].

A transient hypoperfusion, causing infarction, necrosis, and resultant failure of an enlarged hydrophobia gland triggered through pregnancy [1]. Hypertrophy and lacto-trophic hyperplasia during humiliation contribute to an expansion of the previous hypophysis [3]. Among pregnant women among weeks before birth, hypophysis volume and cell counts occur. The rise is mostly due to cell hyperplasia developing prolactin (lactotrophs) and hyperplasia of the anterior hypophysis of other cells. This hyperplasia causes an increased demand for nutrition and metabolism in the whole anterior pituitary gland but does not raise the supply of blood which nourishes the anterior pituitary [9]. A less frequently felt Turrigan volume during pregnancy with pituitary enlargement that causes pituitary arteries compression against the sella hurricane wall and diaphragm sellae [4].

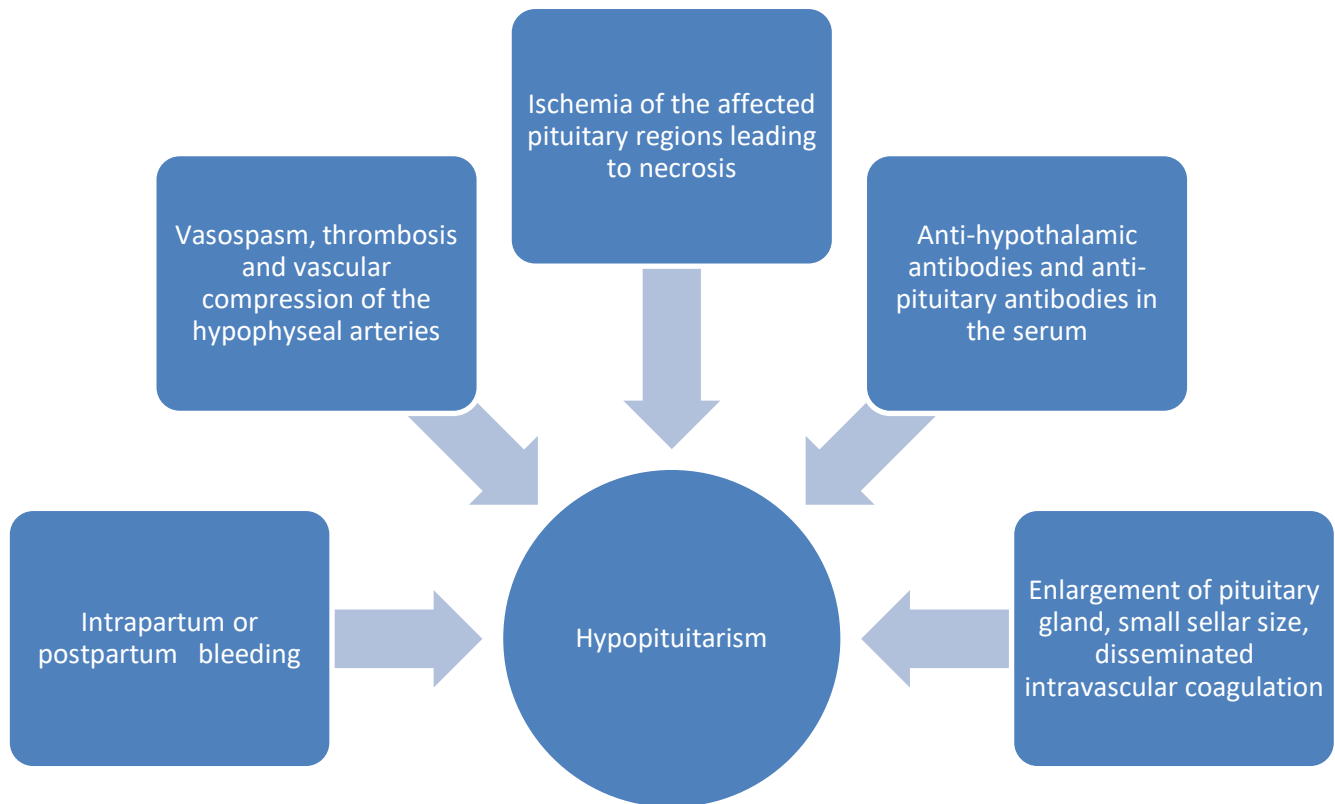


Fig. 1: Pathophysiology of Sheehan's syndrome

A relatively low-pressure environment is the blood supply that feeds the anterior pituitary gland. This mechanism makes the pituitary cells further susceptible to ischemia [9]. This threat from infected pituitary regions may lead to ischemia which further leading to necrosis if its cause is significant hemorrhages or hypotension during the peripartum period [3].

If the disease left untreated by the body, this is progressive in nature and antibodies to dead pituitary tissue growth. Such antibodies attacking tissue will lead to aggravation of the imbalance over the years [9]. Anti-hypothalamic and anti-hypopituitary anticorruption in the serum of the Sheehan syndrome (40% and 35%, respectively) patients who had been diagnosed [1].

Sheehan syndrome, primarily via hyponatremia, can also occur acutely after delivery. Hypopituitarism can lead to hypo-natremia in many potential pathways, including de-creased free-water clearance through hypothyroidism, direct syndrome of excessive hypersecretion of antidiuretic hormones (AHD) and a decreased free-water deficiency (independent on the DHD) by the glucocorticoid gland. In such cases, the amount of potassium is natural because aldosterone suprarenal development isn't pituitary-related. Cases of acute hypoglycemia were also reported [5].

4. CLINICAL FEATURES OF ACUTE SHEEHAN'S SYNDROME

- Agalactorrhea (lactation absence) and/or lactation related difficulties.
- Features of hypopituitarism
 - Secondary hypothyroidism with tiredness, Cold intolerance, constipation, hair loss, weight gain, slowed thinking, and representing heart rate and low blood pressure (BP).
- Features of secondary adrenal insufficiency
 - Fatigue, weight loss, Diabetes insipidus (e.g., thirst as well as an extreme urine flow), Anemia, hypo-natremia (low levels of sodium).
 - However, if you stress your body by a serious infection or surgery years after your body has been delivered, you can become severely aggravated.
- Deficiency of gonadotropin will frequently cause
 - Oligomenorrhea, Amenorrhea, decreased libido or Hot flushes, genital and axillary hair loss.
- Corticotrophin deficiency can cause
 - Weakness, fatigue, hypoglycemia, Dizziness.
- Many vague symptoms caused due to the deficiency of growth hormone including
 - Fatigue, decreased muscle mass and decreased quality of life.
 - Signs of premature aging, fine wrinkles around the eyes and lips Asthenia, weakness, and hypopigmentation.
- In Sheehan's syndrome the hematological abnormalities
 - Anemia, Pancytopenia, Thrombocytopenia, Reduced PT and aPTT, Higher fibrinogen and D-dimer levels, Acquired factor VIII and von Willebrand factor (aFVIII–VWF) deficiency, Increased thrombophilic genetic mutations.
- Psychiatric disturbances, cognitive dysfunction Changes in body composition

5. DIAGNOSIS OF SHEEHAN SYNDROME

The anterior pituitary gland is carried by collecting blood when the diagnosis of the Sheehan syndrome becomes apparent with a strong clinical suspicion. Manufactured hormones in the anterior pituitary phase are gonadotropins like as follicle-stimulating hormone (FSH) and luteinizing hormone (LH), prolactin (PRL), adrenocorticotropic hormone (ACTH), and thyroid-stimulating hormone (TSH). The hormones are manually generated in the anterior pituitary gland. The main concern for the necrotic disease is "GH first, followed by PRL, FSH, LH, ACTH, and later, TSH last. The complete blood count (CBC) with a differential number, basic metabolic profile, thyroid test function (TSH, FT3, and FT4), FSH, LH, prolactin, estrogen, cortisol, and growth hormone" [8] should be included as the laboratory tests in order [8].

Laboratory measures that include a normocytic/normochromic anemia, thrombocytopenia, and/or pancytopenia that occur during the course of Sheehan Syndrome. There may also be hyponatremia and hypoglycemia. Certain less popular laboratory tests that could be anomalous during the Sheehan syndrome workup include numerous thrombophilic genetic defects, low PT and aPTT tests, anti-pituitary antibodies, and antimicrobial antibodies. Such tests can be taken to validate the diagnosis after the primary tests [9].

An MRI may also be done to validate the diagnosis by testing the pituitary. In some 70% of the cases, an empty sella occurs and a partly empty sella occurs in approximately 30% of later MRI patients. [4] Sheehan's acute symptoms of MRI syndrome will indicate an acute cerebral infarction in an enlarged pituitary without the use of a hemorrhage. As the disease progresses, atrophy of the pituitary gland can occur, and eventually partial or empty sella [8]. Sheehan syndrome, killed with PPH, is well known; it may have chronic symptoms, including lactate loss, moderate headache, weakness, nausea, and amenorrhea after a fairly long latent duration of period [2].

6. TREATMENT / MANAGEMENT

The permanent replacement of deficient hormones is the basis for Sheehan syndrome diagnosis. Levothyroxine or liothyronine substitute can be used to treat hypothyroidism. A prednisone or hydrocortisone replacement can be treated for the cortisol deficiency. When the uterus is replaced with a merge of estrogen and progesterone in the event of the present pregnancy, gonadotropin deficiency should be treated with oestrogen. The risks and benefits of thrombophilia, cancer, myocardial disease, and others will certainly be addressed with the patient. Perhaps the most common hormone that should be substituted is the growth hormone and the dose must be individualized to the needs of the patient. Desmopresin (DDAVP) is the recommended medication of choice for patients who develop diabetes insipidus. They recommend that women with Sheehan's Syndrome have an increase in the risk of osteoporosis due to hypogonadism. In this situation, a person with common knowledge about hypopituitarism and the use of growth hormone is recommended [8]. For this reason, both oral contraceptives, including Ethinyl estradiol, and transdermal patches, have proved to be effective, these women must undergo hormone replacement therapy to battle bone loss. [9] Such women should be screened and closely monitored for bone density. Information should be given on the significance of routine regulation, the side effects of protracted contraceptives usage, especially blood clots risk, and adequate weight-bearing exercises [9].

7. CONCLUSIONS

For underdeveloped nations, the condition of Sheehan's syndrome leads to hypopituitarism. Hypopituitarism is often subtle in clinical characteristics and years can pass before it is identified after the inciting delivery. The history of post-partum hemorrhage, lactate deficiency along with the end of lines is vital diagnosis signs. To order to minimize patients' morbidity and death, early diagnosis and adequate care are important.

8. REFERENCES

- [1] José Gerardo González-González et.al (2018), Research Article, Sheehan's Syndrome Revisited: Underlying Autoimmunity or Hypoperfusion?, *International Journal of Endocrinology*
- [2] Matsuzaki et al. *BMC Pregnancy and Childbirth* (2017) A case of acute Sheehan's syndrome and literature review: a rare but life-threatening complication of postpartum hemorrhage
- [3] El-Din Ewees and Abdel Hamid(2014), Sheehan's syndrome with acute renal failure and severe preeclamptic toxemia, *Ain-Shams Journal of Anesthesiology*
- [4] Halit Diri et.al(2015), Sheehan's syndrome: new insights into an old disease, *Article in Endocrine*
- [5] Varutti et al.,(2019) *Emergency Med, Headache after Delivery, a Misleading Presentation of Sheehan's Syndrome: A Case Report,Anesthesia and Intensive Care, Santa Maria degli Angeli Hospital, Pordenone, Italy*
- [6] Shivaprasad (2011) Sheehan's syndrome: Newer advances Review Article, *Indian Journal of Endocrinology and Metabolism, Department of Endocrinology, M. S. Ramaiah Hospital, Bangalore, India*
- [7] Nath et.al,(2018) Case Report, Successful Management of Patient with Sheehan's Syndrome Presenting with Psychosis and Catatonia, *Indian Journal of Psychological Medicine |Volume 40 | Issue 3 | May-June 2018*
- [8] Mark Schury, (2020),Sheehan Syndrome PubMed
- [9] Gaspar BE, Diagnosis and treatment challenges of Sheehan's syndrome ,*Frontiers in Women's Health, University of North Florida, Jacksonville, USA*
- [10] World Health Organization (2013) Priority diseases and reasons for inclusion. [Available at: http://www.who.int/medicines/areas/priority_medicines/Ch6_16PPH.pdf]
- [11] American College of Obstetricians and Gynecologists (2017) ACOG practice bulletin: Clinical management guidelines for obstetrician-gynecologists: Postpartum hemorrhage.
- [12] Diri H et.al, (2016) Sheehan's syndrome: new insights into an old disease. *Endocrine* 51: 22-31.