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Case Report

Anesthetic Concerns in a Patient with Sheehan's Syndrome Posted for Elective Surgery

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Abstract

Sheehan's syndrome (SS) most commonly occurs in young females who are at high risk of developing medical and obstetric complications. It is characterized by varying degree of hypothyroidism and usually develops as a result of ischemic pituitary necrosis subsequent to severe postpartum hemorrhage in them. Absence of lactation and failure of menstrual cycle resumption after delivery which was complicated with severe intrapartum hemorrhage are some of the important clues in diagnosing SS. A patient with the disease being posted for an elective surgery may pose a challenge for the anesthesia team if it remains undiagnosed. Adequate preoperative optimization and preparation should be considered before anesthesia and surgery in such cases.

Keywords: Young Women; Pituitary Necrosis; Sheehan's Syndrome; Postpartum Haemorrhage; Anesthesia

Introduction

Sheehan's syndrome (SS), first described by Harold Leeming Sheehan in 1937, is characterized by varying degree of hypopituitarism, lactation failure and develops as a consequence of ischemic pituitary necrosis following severe postpartum hemorrhage [1,2]. It mostly occurs in young females who are at high risk of further medical, obstetric, and anesthetic complications. Hormonal insufficiencies, ranging from single pituitary hormone insufficiency to panhypopituitarism, are seen in the affected patients. Deficiencies of growth hormone and prolactin are among the most frequent endocrine disorders in the syndrome. Treatment is based on adequate replacement of the deficient hormones. Hormone replacement has been found to have beneficial effects; however, risk to benefit ratio, side effects and cost of the treatment are some of the important considerations in management of the condition.

Despite the hormonal insufficiency, pregnancy is quite possible in some patients with the condition if there is no wasting of the genital tract. Second pregnancy has been found to cause an improvement in the condition and eventually cure, provided the peripartum period is uneventful. This may be because of the stimulation of maternal pituitary during pregnancy or due to fetal/placental hormones. Furthermore, the clinical improvement in subsequent pregnancy hides the characteristic signs and symptoms of SS in a affected women [3]. Matsuzaki., *et al.* [4] in their case report and literature review found that anemia, hypotension, and postpartum hemorrhage are the three leading causes which predispose young women to SS. With improvements in obstetrical care, Sheehan's syndrome has become uncommon except in low-income countries [5]. We present anesthetic issues and concerns in a case of Sheehan's syndrome with fracture neck femur on hormone replacement therapy posted for surgical repair.

Case Presentation

A 34-year-old woman presented to our institute with fracture neck femur after an accident and was planned to have short proximal femoral nailing (PFN). At the time of presentation, she

had severe pallor clinically, had dry skin and very sparse axillary hair. Her heart rate was 86/min and regular, blood pressure was 108/64 mm of Hg in the supine position, oxygen saturation was 99% at room air and the respiratory rate was 14/min. Her routine surgical profile was within normal limits except Hemoglobin which was 8 gm/dl.

She had a history of massive postpartum hemorrhage and prolonged hospitalization consequent to a normal delivery. Later, she was evaluated for secondary infertility. She underwent complete hormonal workup for the inability to conceive and was diagnosed to have hypothyroidism with low serum cortisol levels. Magnetic resonance imaging (MRI) of the brain was performed, indicating ischemic infarction of the pituitary gland and a diagnosis of SS was made. She was prescribed tablet hydrocortisone 10 mg/day and tablet thyroxine 100 mcg once a day. Later she was put on tablet prednisolone 5 mg once daily and tablet thyroxine 50 mcg once a day.

Two units of cross matched blood were arranged. As the patient had anemia with multiple metabolic and endocrinological disturbances, subarachnoid block with adjuvant added to the local anesthetic was planned. She was kept 8h fasting prior to surgery and was advised to take 50 microgram thyroxine tablet, 150 mg ranitidine tablet and 10 mg metoclopramide tablet on the day of surgery, 2h prior to being shifting in the operating room along with sips of water. 100 mg of hydrocortisone was administered intravenously in the operating room. A general anesthesia backup to deal with any emergency or block failure with appropriate preparations was done as a standard of care. Standard ASA monitors were applied and their functions verified and i.v. line was secured with two large bore canula and preloading done with 500 ml Ringer Lactate. Supplemental oxygen was given via venturi mask with oxygen flow of 4 L/min. Subarachnoid block was given at L3-L4 intervertebral space using 27-gauge Quincke spinal needle in sitting position and 1.5 mL (7.5 mg) of hyperbaric, 0.5% bupivacaine, and 25 mcg fentanyl (0.5 mL) were administered. The patient was made supine immediately and positioned according to the requirement to commence surgery when the level of the block was achieved up to T10. During the intraoperative period, one episode of hypotension occurred which was managed with a single bolus of injection Ephedrine 6 mg. In the post-operative period, the patient was managed in high dependency unit(HDU) for the first 48 hours and received injection paracetamol 1 g with injection Tramadol 50 mg intravenously eight hourly i.e. Shiv-Mix regimen [6] for postoperative pain relief during first 24 hours. Any breakthrough pain was dealt with injection of aqueous diclofenac 75 mg intravenously. Postoperative period was uneventful and the patient got discharged on the 4th postoperative day in stable condition on oral medications and advised to continue their routine prescription.

Discussion

Varying degree of anterior pituitary dysfunction is seen in SS [7]. Though posterior pituitary dysfunction is uncommon, some patients may present with impaired neurohypophyseal function [8]. Anaemia is commonly associated with the Sheehan's syndrome and responds to appropriate replacement therapy with thyroxine and glucocorticoids [9]. Hypopituitarism should be suspected as a possible cause of anaemia and a hormonal assessment to be done, especially in patients with anaemia resistant to therapy and/or with a history suggestive of Sheehan's syndrome [10]. Sheehan's syndrome also affects bone metabolism. Patients with SS often have osteopenia and osteoporosis owing to disorders of parathyroid hormone, Growth hormone and calcium metabolism [11,12]. Among the most important aspect of the condition is being aware of the syndrome. Absence of lactation and failure of menstrual resumption after a delivery that was complicated with severe intrapartum hemorrhage are the important clues in its timely diagnosis. In patients with evident obstetric history, prolactin response to TRH appears to be a relevant screening test for the condition.

A patient with Sheehan syndrome being presented for a surgery may pose a challenge if it remains undiagnosed [13]. Intraoperative management of these patients may be extremely difficult and may result in disaster if appropriate optimization has not been priorly done. In the absence of any contraindication, regional anesthetic techniques including central neuraxial blocks are beneficial and relatively safer if the patient is adequately optimized prior to anesthesia and surgery [14].

Conclusion

SS is rarely seen now days due to improved obstetric practices. History of intrapartum or postpartum haemorrhage and prolonged hospitalization along with lactional failure and lack of menstrual resumption should arise high suspicion for this condition. Adequate preoperative optimization and preparation should be considered before surgery of such patient and anesthetic technique needs to be tailored according to patient condition and surgical requirement.

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