

CASE REPORT

ANESTHETIC MANAGEMENT OF GESTATIONAL TROPHOBLASTIC DISEASE WITH HYPERTHYROIDISM

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ABSTRACT: Secondary hyperthyroidism can often complicate gestational trophoblastic disease. The life threatening complications of hyperthyroidism such as thyroid storm, atrial fibrillation, etc can occur perioperatively which poses multiple challenges to the anaesthetists. We report a case of molar pregnancy with hyperthyroidism posted for emergency dilatation and evacuation, which was done under spinal anaesthesia without any complications.

KEYWORDS: Gestational trophoblastic disease, hyperthyroidism, thyroid storm.

INTRODUCTION: Gestational Trophoblastic Disease (GTD) is a term used for a group of pregnancy-related tumors. Hydatidiform mole, more commonly known as molar pregnancy, is one of the four neoplastic manifestations of GTD. Although hyperthyroidism is a rare complication of GTD, when it is present, it can be severe and potentially life-threatening. The clinical scenario may vary from absence of symptoms to thyroid storm.¹

Molar pregnancy occurs in one in 1945 pregnancies worldwide² and more commonly in Asian countries.³ The incidence in India is one in 400 pregnancies⁴ of the molar pregnancies 80% are uncomplicated and follow an unremarkable course. However, 20% are associated with severe perioperative complications that may lead to morbidity and mortality, in an otherwise healthy women.⁵ Anemia, hyperthyroidism and acute cardiopulmonary distress are significant complications of complete molar pregnancy. Acute cardiopulmonary distress and adult respiratory distress syndrome (ARDS) have been reported after evacuation of mole in 27% of cases.^{6,7} The critical nature of the associated complications requires advanced perioperative anesthetic management.⁸ We report a case of molar pregnancy with hyperthyroidism posted for emergency dilatation and evacuation.

CASE REPORT: A moderately built 20 year old, primigravida with 12 weeks molar pregnancy was brought to operation theatre for emergency suction evacuation. She complained of irregular per vaginal bleeding, palpitation and loss of weight for last 1 month. No other medical comorbidities were present. She was conscious, oriented, and moderately pale. She had pulse rate of 132 beats/min regular, good volume. Blood pressure 128/70 mm of Hg, respiratory rate 18/min. Other general physical examination was unremarkable. Her hemoglobin was 9.5gm%, random blood sugar 107mg/dl, blood urea 16mg/dl. serum creatinine 0.7mg/dl, ECG showed sinus tachycardia, HCG->750000 m IU/ml (Normal range 20300-166100 m. IU/ml). Thyroid function tests revealed T3-6.55nmol/L, T4->320nmol/L and TSH-0.017 µIU/mL, suggestive of hyperthyroidism. Abdominal ultrasonography revealed renal agenesis on right side.

She was nil per orally for 4 hours. She was planned for spinal anesthesia. She was counseled and written consent obtained. Operation theatre was prepared with emergency drugs, antiarrhythmic drugs and cardiac defibrillator. Intravenous line accessed with 18 G cannula, pre-

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medicated with Inj. Metoclopramide 20 mg. and Inj. Ranitidine 50 mg. Multipara monitor which measure NIBP, ECG, SpO₂, and Temperature connected. Under aseptic precaution, 15mg of 0.5% bupivacaine heavy with fentanyl 25mcg was injected into subarachnoid space at L3-L4, after clear and free flow of CSF. Level of anesthesia was till T6 dermatome. Inj Midazolam 2 mg iv given for sedation, Oxygen was given through face mask. Surgery was allowed to proceed. 1500 ml of crystalloids infused intra-operatively. Blood loss was 200ml, for the procedure was lasting an hour. Intraoperative period was uneventful. Postoperatively, patient was shifted to the intensive care unit and monitored. No manifestations of thyroid storm were noted. Patient was followed for three weeks after which HCG levels decreased and patient became euthyroid.

DISCUSSION: Gestational Trophoblastic Disease (GTD) is a term used for a group of pregnancy-related tumors. Molar pregnancies develop as a result of abnormal fertilization and are categorized as complete or partial. In a complete molar pregnancy the placenta becomes edematous, secondary to grossly enlarged hydropic degeneration of the chorionic villi and the fetus fails to develop. Cord and amniotic membranes are absent. Patients of molar pregnancy have high serum levels of Human Chorionic Gonadotropin (hCG), which consists of alpha and beta subunits alpha subunit is identical to TSH and beta subunit has structure to TSH. Because hCG and TSH receptors are similar, hCG can act directly on TSH receptors in the thyroid. This results in an increased level of thyroid hormone and decreased TSH levels. Serum β Human Chorionic Gonadotrophin (HCG) level is the most specific and sensitive marker for trophoblastic tumors.⁹ Clinical hyperthyroidism due to trophoblastic disease is cured by surgical evacuation of molar tissue. However, the preoperative management of these patients present multitude of challenges for the anesthesiologists. High output cardiac failure (secondary to thyrotoxicosis), thyroid storm, hypertension, and embolization of pulmonary arteries by trophoblastic materials, hypovolemia, disseminated intravascular coagulation, and pulmonary edema (secondary to severe anemia) are some of them.^{10,11} Thus anesthetist should be prepared to deal with such complications.

In literature total intravenous anesthesia, general anesthesia and regional anesthesia have been described for the management of molar evacuation. Crucial to anesthesia management is the perioperative prevention of thyrotoxic crisis and control of sympathetic stimulation secondary to hyperthyroidism.¹² In actively bleeding, hypotensive patients, and general anesthesia has to be used to facilitate evacuation. However, uterine relaxation may increase blood loss and inhaled anesthetics with known tocolytic effect such as halothane, sevoflurane, enflurane and isoflurane should therefore only be used in low concentrations. Sevoflurane is preferred as it augments sympathetic response.

A conscious patient under the regional anesthesia may help in the early diagnosis of embolization by complaining respiratory distress. Safe use of spinal anesthesia in patients with hydatidiform mole and hyperthyroidism has been reported in the literature.^{13,14}

In our case the patient was having clinical signs of hyperthyroidism and laboratory tests were confirmative. The patient was hemodynamically stable in the preoperative period. So we decided to use regional anesthesia, as it was appropriate, has no tocolytic effect, offered minimal interference with the patients cardiovascular status and provided excellent post-operative pain relief after surgery.

Intraoperative events included hypotension and tachycardia was prevented with antiarrhythmic agents and transfusion with a plasma expander and crystalloid fluid.^{15,16}

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Antiarrhythmic agents like esmolol and digoxin can be used effectively in treating tachycardia and atrial fibrillation. In case of refractory atrial fibrillation and cardiac failure cardioversion can be considered.

CONCLUSION: Often, the diagnosis of hyperthyroid state is retrospective one, as it can be missed in the emergency scenario of patients requiring molar evacuation. To safe care for molar pregnancy, these patients should be screened for hyperthyroidism and be well equipped with anesthetic armamentarium and techniques geared to maximize the better outcome.

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