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Case Report

Molar Pregnancy- A Snowstorm Encounter: A Case Report

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ABSTRACT

Gestational trophoblastic disease (GTD) is a cluster of tumors which often had a lethal outcome in the past. As the years have passed, with better understanding of the pathophysiology fatalities have reduced and patients have been cured. On an anesthetic stand point these cases can be challenging to manage due to the emergency nature of the surgery and various systemic complications they may present with. We present to you a case of a 29-year-old female with molar pregnancy managed by spinal anesthesia.

Introduction

Gestational trophoblastic disease is a group of tumors which develop in early pregnancy due to abnormal trophoblastic tissue proliferation which secrete human chorionic gonadotropin(hCG) hormone. It is further classified into two groups Hydatiform mole a.k.a molar pregnancy and Gestational trophoblastic neoplasia (GTN) [1-2].

Hydatiform mole occurs due to abnormal fertilization/gametogenesis. It is further subdivided into complete mole (empty ovum is fertilized with sperm, karyotype- 46XX) and partial mole (two sperms fertilize one ovum, karyotype-69XXX, 69XXY or 69XYY, diploid karyotype may be seen). Partial mole has fetal parts while they are absent in complete mole [1-2].

Case Report

A 29-year-old female, G2P1L1, (18+6) weeks by date, came to our hospital one day prior to the surgery for a regular ANC check up with an obstetric USG, showing classical signs of snow storm appearance suggestive of? Vesicular mole. The patient was a second gravida with a previous normal delivery and unremarkable medical history. On examination she was afebrile (37 degrees Fahrenheit) with tachycardia of 110 beats per min, blood pressure of 110/60 mm of Hg and ichthyosis. She had no pallor, palpitations, restlessness, sweating, heat intolerance, diarrhea or exophthalmos. Systemic examination was unremarkable. The patient was then planned for suction and evacuation.

Preoperatively, we sent routine blood investigations which revealed a Hb- 11.9 gram %, LFT, RFT and coagulation profile were within normal limits. The ECG was suggestive of normal sinus rhythm. The thyroid profile was as follows- S.TSH- 0.01, Free T3 - 7.7, Free T4- 1.41, serum beta HCG was elevated and found to be > 2,25,000 mIU/. Cross matching was done with adequate blood reserved in anticipation of vaginal bleeding. We also secured two wide bore cannulas, one on each hand.

On the day of the surgery NBM status was confirmed. High risk consent explaining the need for post-operative ICU stay, chances of bleeding and risk of thyroid storm was taken. Emergency drugs and equipment for intubation were kept ready. As our patient was hemodynamically stable except for tachycardia, we decided to go for spinal anaesthesia. After the patient was shifted to the operation theatre, all standard monitors according to ASA guidelines (SpO2, NIBP, ECG) were attached. The patient was then premedicated with inj. dexamethasone 0.2 mg/kg iv and preloaded with one pint of ringer lactate solution.

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A subarachnoid block (SAB) was administered with 25G Quincke's needle using inj. ropivacaine 0.75% (H) 1.8 cc along with inj. fentanyl 20 mcg. A level of T-8 dermatome was achieved. Saturation was maintained at 100 percent on 4l/min of oxygen delivered via face mask. For anxiolysis purposes inj. midazolam 0.02mg/kg iv was given. The patient experienced two episodes of hypotension intraoperatively which were managed with inj. phenylephrine 50 mcg bolus doses. To aid the obstetricians after evacuation of the mole, inj. pitocin 20 IU iv was given in a 500ml DNS pint slowly at 8 drops/minute. Blood loss intraoperatively was minimal and fluids were given judiciously.

Patient was then shifted to the post-anaesthetic care (PAC) unit where vitals were observed for 6 hours and then shifted to the ward. On post-operative day one, patient had one episode of fever which was managed conservatively with inj. paracetamol 1gm iv. Other than this patient was vitally stable. 72 hours post operatively beta HCG levels dropped to 71,917 mIU/ml. The histopathology report concluded it's a complete mole, which has more risk of developing choriocarcinoma than a partial mole [1-2].

Discussion

Molar pregnancy is generally diagnosed in the first trimester of pregnancy. The gold standard non-invasive diagnostic test is ultrasound. The chief complains being pain in abdomen, abnormal vaginal bleeding in a UPT positive patient with abnormally high levels of beta hCG for the gestational age. They may experience hyperemesis gravidarum, uterine enlargement greater than for the gestational age with no fetal heart sounds [1-2].

Epidemiological studies show that Southeast Asia and Japan have a greater incidence (2 in 1000 pregnancies) than the United States of America (1 in 600 therapeutic abortions and 1 in 1500 pregnancies). Incidence in India is 1 in 400 pregnancies. However, over the years the incidence throughout the world has decreased [1-2].

The plan of anaesthesia as per literature can be-monitored anesthetic care, total intravenous anesthesia (TIVA), general anaesthesia, spinal anaesthesia and combined spinal-epidural [1,3]. A case has been reported of a woman with 12 weeks of gestation with molar pregnancy with hyperthyroidism which was managed under total intravenous anesthesia (TIVA) using propofol, remifentanil and esmolol infusion for controlling sympathetic hyperactivity during surgery [4].

Patients presenting with hyperemesis gravidarum which is due to excessive secretion of beta HCG causing dehydration can lead to electrolyte and metabolic imbalances. This kept in mind hydration should be done with cautious use of fluid so as to avoid further complications [1].

These patients are at an increased risk of hyperthyroidism secondary to secretion of human chorionic gonadotropin hormone whose alpha subunit is structurally similar to thyroid stimulating hormone (TSH) [3-4]. In the absence of adequate pre-operative evaluation, these cases will often remain undiagnosed right until they invariably present as a thyrotoxic crisis in the peri-operative period. Thus, these patients should always be evaluated for hyperthyroidism. In cases of severe hyperthyroidism, individualizing the treatment as per the need of the patient with beta blockers, antithyroid medications, steroid and/ or lugols iodine before evacuation of the mole is required [3, 5]. Owing to the emergency nature of these surgeries, anaesthetic management is often challenging, and a regional block can be considered as the standard of care. However, in case of active bleeding and severe hypotension general anesthesia is the preferred modality in order to maintain hemodynamic stability [5].

The potential for blood loss in these surgeries is commonly acute and massive, which may be further aggravated by inhaled anaesthetic's with known tocolytic qualities, such as halothane, enflurane, and isoflurane are best used in low concentrations, if not completely avoided [5]. Furthermore, laryngoscopy induced pressor response in patients with hyperthyroidism may precipitate hypertensive crisis [6].

In our case, subarachnoid block was the preferred choice of anesthesia as the patient was hemodynamically stable, except for tachycardia. Owing to its advantages over general anaesthesia, easy to perform, non-tocolytic and safe in hyperthyroidism. As the patient is conscious detection of symptoms of thyroid storm, cardiopulmonary distress, uterine perforation at an earlier stage is possible. With judicious use of intravenous fluids and blood, pulmonary edema can be avoided [3,7].

Ropivacaine was our choice of drug which is an s-enantiomer and thus a safer drug than bupivacaine with less cardiotoxicity [8]. The additive of choice was fentanyl, an opioid, which not only prolongs the duration of action of the subarachnoid block but also provides for post-operative analgesia [9]. Injection dexamethasone 0.2mg/kg was given, which helps in prolonging the duration of action of subarachnoid block and has anti-emetic action [10-11]. Further, it inhibits the peripheral conversion of T4 into T3 and has shown to improve outcomes in patients with thyroid storm [12]. Phenylephrine exerts it is action by directly acting on alpha-1 adrenergic receptors. A bolus of 50 to 200 mcg iv is often administered in adults to treat systemic hypotension accompanied due to sympathetic blockade in regional anesthesia with reflex vagal effects leading to decrease in heart rate [13].

A list of complications is associated with molar pregnancy which should be known to an anesthetist [14].

1. Acute cardiopulmonary distress

2. Severe anaemia
3. Hyperthyroidism with potential of thyroid storm
4. Trophoblastic emboli
5. Disseminated intravascular coagulation
6. Haemorrhage
7. Pregnancy induce hypertension

The molar tissue releases factors which trigger the coagulation cascade in the body leading to Disseminated Intravascular Coagulation [1].

Anemia in these patients is secondary to occult per vaginal bleeding and from massive blood loss during surgery. Severe anemia can lead to left ventricular failure and pulmonary congestion, leading to cardiopulmonary distress [15].

Acute cardiopulmonary distress is a fatal complication following evacuation of the mole observed in 27% of the cases and especially with a uterine size of 16 weeks and more. Patient is observed for 24 hours post evacuation for symptoms. Treatment varies depending on the severity of the patient from requiring vasopressor agents, mechanical ventilation, invasive hemodynamic monitoring or a trophoblastic embolus leading to death [14-15].

Conclusion

A multidisciplinary approach involving anesthesiologist, obstetricians and endocrinologists is required to diagnose and treat complications of molar pregnancy promptly in the perioperative period. Spinal anaesthesia is an effective alternative in the management of these patients.

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