Thyroid Storm as Cause for Emergent Cesarean Section

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Introduction: Thyroid storm is a rare life-threatening condition with a 20% mortality rate (1). With the added stress of childbirth, thyroid storm occurs in 2-4% of pregnant patients with hyperthyroidism (1). The patient may present with fever, emotional disturbances, tachypnea, diaphoresis, and diarrhea. If left untreated, the disease state may progress to cardiomyopathy, pulmonary edema, and even coma (2).

Case: A 34 year-old patient at 34 weeks gestation, with a history of Graves’ disease on propylthiouracil, initially presented with preterm labor. She was noted to have elevated blood pressure and was treated with terbutaline, labetolol, and nifedipine. She was discharged and readmitted later that day with vaginal bleeding and possible placental abruption. BP was 226/118 mmHg and heart rate 130/min. Urine showed trace protein. She was treated with labetolol, hydralazine, and nifedipine and underwent a cesarean section under a spinal anesthetic. The following day, she complained of shortness of breath and desaturated to SpO2 of 89% on room air. She was placed on 10L O2 non-rebreather facemask and given furosemide 20mg IVx2. CXR revealed pulmonary congestion and an echocardiogram showed 50-55% ejection fraction with moderate mitral regurgitation. Her TSH was <0.02 ng/mL, T4 was 17 mcg/dl. She was placed on additional propylthiouracil and propanolol. She was discharged without further incident.

Discussion: It is important to identify and treat a patient in thyroid storm without delay. The differential diagnosis includes preeclampsia, pregnancy induced hypertension, and malignant hyperthermia. Careful monitoring of vital signs, maintaining a euthyroid state, and treatment with PTU and propanolol lead to better maternal and fetal outcome. Since increased catecholamine secretion is implicated in the genesis of thyroid storm, a spinal anesthetic may be beneficial by producing a sympathectomy. Glucocorticoid may be needed since endogenous glucocorticoid production is impaired. Glucocorticoids also inhibit peripheral conversion of T4 to T3. Propanolol is used to treat the cardiovascular symptoms of thyroid storm and it also inhibits the peripheral conversion of T4 to T3. Radioactive iodine treatment should be delayed until after pregnancy since it freely crosses the placenta. Although the fetus may develop a goiter or hypothyroidism from the anti-thyroid medications, it can be detected through ultrasound and percutaneous umbilical cord blood sampling. In this case, thyroid storm caused abruption, preterm birth, decreased cardiac function and pulmonary edema, with the final diagnosis made only in the postpartum period.