Uncommon Cause of Altered Mental Status in the Parturient with Substance Use Disorder: Could it be the Thyroid?

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Background

- Overt hypothyroidism is rare in pregnancy (often associated with infertility)
- Increases risk of hypertensive disorders of pregnancy, non-reassuring well-being, IUGR, PPH, need for c-section, and adverse neonatal outcomes.
- Myxedema coma is a rare life-threatening consequence of untreated hypothyroidism.
- Progression to myxedema coma in pregnancy has rarely been reported and often difficult to diagnose.
- Early recognition and treatment is paramount given the relatively high mortality rate.
- Presentation is non-specific and may mimic pre-eclampsia with hypertension, proteinuria, encephalopathy and generalized edema.
- Often a precipitating event, including labor or infection[1].

Case Report

35-year-old G5P1031 at 35w4d presented with known preeclampsia with severe features (BP) and subsequent IUFD

PMHx: active substance use (methamphetamine, cocaine, opioids, benzodiazepines), hypothyroidism, hepatitis C, bipolar disorder
Physical Exam: edematous bilateral LE, AMS with waning orientation, persistently hypertensive

Labor Course: Mg infusion, induction with Pitocin, increasing somnolence with concern for intrapartum substance use, unable to sit for neuraxial, moderate improvement with naloxone

Immediate Postpartum Course: uncomplicated SVD, increasingly obtunded, hypothermic. Labs notable for elevated troponin (776ng/L), markedly elevated TSH (123uIL.mL) and Covid +

Hospital Course/Outcome: transferred to MICU for initiation of IV thyroid hormone. Hospital course complicated by significant withdrawal/agitation and aspiration pneumonia requiring intubation/mechanical ventilation. Left AMA shortly after extubation.

Learning Points

- It is important to maintain a comprehensive differential when evaluating a laboring patient with altered mental status, particularly in patients with substance use disorder and severe preeclampsia (magnesium overdose, intoxication, hypercarbia, hypoxia, stroke, seizure, sepsis, PRES).
- Even with recent active substance use, one must rule out underlying medical causes (hypoglycemia, hypoxia, anemia, myocardial ischemia).
- Overt hypothyroidism/myxedema coma in pregnancy is rare and difficult to diagnose, symptoms can overlap with pre-eclampsia
- Given its high mortality, it is important consult endocrinology to initiate treatment early with transfer to ICU for close hemodynamic monitoring.

Myxedema Coma Signs/Symptoms

↓ 🧠: AMS, lethargy, obtundation, seizures
↓ 🧂: hyponatremia
↓ 🌡 🥶: hypothermia
↓ : hypoventilation
↓ ❤️: bradycardia
↓ 🩸: hypoglycemia

Treatment: IV levothyroxine and IV hydrocortisone
Anesthetic considerations: airway edema, intravascular volume depletion, catecholamine resistant cardiac depression, arrhythmia, coagulopathy, and increased aspiration risk.[1,2]

References:

[1] *Singh AK, Sarkar S, Khanna P. Parturient with Endocrine Disorders in the Intensive Care Unit. Indian J Crit Care Med. 2021 Dec;25(Suppl 3):S255-S260. doi: 10.5005/jp-journals-10071-24055. PMID: 35615618; PMCID: PMC9108778.*

[2] *Peramunage D, Nikravan S. Anesthesia for Endocrine Emergencies. Anesthesiol Clin. 2020 Mar;38(1):149-163. doi: 10.1016/j.anclin.2019.10.006. Epub 2020 Jan 2. PMID: 32008649. PMID: 19857436*