C-33 Obstetric Catastrophes in the Making: The Birthing Center Transfer

Moderator(s)/Facilitator(s): Inmaculada Guasp, M.D., Ellen Brand, M.D.

Objective

After completion of this session, the participant will be able to:

- Identify therapies and processes that can lead to hyponatremia during prolonged labor.

Case Stem Question

A 36 year old G1P0 woman was transferred from a birthing center and persisted in attempting a natural delivery including midwife management of labor. OB anesthesia was contacted urgently for C-section due to failure of descent and non-reassuring fetal heart rate tracing.

Prior to anesthesia's involvement, significant events included SROM> 41 hours, an oxytocin drip running at moderately high doses and active pushing for over 4 hours.The patient's initial intention had been to deliver "naturally" at a birthing center with a midwife and assistance of her doula. She had arrived at the birthing center many hours after SROM with known positive Grp B strep status and had labored there for 18 hours before being transferred to the hospital. She was resistant to blood work, an IV, continuous fetal monitoring and conventional medical care. She insisted on oral hydration and hypnobirthing techniques. In addition, to refusing to discuss the progression of her labor pain, she refused any labor analgesia and requested that that the anesthesiologist not be involved in her care (up until the time of her C-section). She continued hypnobirthing techniques with support from a coach by telephone.

During the pre-op interview by the anesthesiologist, the patient was exhausted and monosyllabic in her responses. Spinal was attempted for a few minutes but was unable to hold still, and had projectile vomiting. General anesthesia was induced without difficulty. Persistent hypertension and PVC's were noted in spite of adequate levels of anesthetic. The patient was unable to be woken at the conclusion of the case and lab values indicated a serum sodium of 114meq/L

Why did this patient become so hyponatremic and could anything have been done to avoid this outcome?

Guiding Questions for Discussion

1. What are the medical risks and challenges in this specific patient demographic?
2. What factors contribute to hyponatremia in pregnancy and during labor?
3. What elements in this specific case contributed to the patient's severe hyponatremia? Do all women exposed to this course of treatment develop hyponatremia?
4. What are the best types of fluids for a woman to drink during labor? What is

ACOG's stance on p.o. intake during labor?
5. Some laboring women choose "natural "techniques that challenge our abilities to provide care. When do we say NO?
6. What are patients allowed to and not allowed to dictate regarding their medical care once in the hospital?
7. Can a pregnant woman choose a path of medical care that poses a threat to her infant?
8. If a medical team disregards a patient's choices and imposes medical practices on her to save her life or that of her infant, can she pursue legal action against the providers?
9. Given the restrictions imposed on us by this patient, what things, if any, could have improved aid in her care?
10. Is birth outside a hospital "safe" in this country? What agency regulates, accredits and determines the standard of care in birthing centers?

References

1. Feeney JG. Water Intoxication and Oxytocin. Br Med J (Clin Res Ed) 1982; 285:243
2. Li C, Wang W, Summer SN, et al. Molecular mechanisms of antidiuretic effect of oxytocin. J Am Soc Nephrol; 2008; 19:225
3. Bennet BL, Hew-Butler T, Rosner MH, etal. Wilderness Medical Society Clinical Practice Guidelines for the Management of Exercise Associated Hyponatremia: 2019 Update. Wilderness Environ Med 2020; 31:50
4. Almond CS, Shin AY, Fortescue EB, et al. Hyponatremia among runners in the Boston Marathon. N Engl J Med 2005; 352: 1550.
5. Lillen AA. Oxytocin-induced water intoxication. A report of a maternal death. Obstet Gynecol 1968; 32:171
6. Bilek W, Dorr P. Water intoxication and grand mal seizure due to oxytocin. Can Med Assoc J 1970; 103:379
7. Moen V, Brudin L, Rundgren M, Irestedt L. Hyponatremia complicating labor- rare or unrecognised ? A prospective observational study. BJOG 2009; 116:552
8. Whalley PJ, Pritchard JA. Oxytocin and Water Intoxication. JAMA 1963; 186:601
9. Berbum D, Lonee H, Hakli TF. Oxytocin infusion: acute hyponatremia, seizures and coma. Acta Anaesthesiol Scand 2009; 53:826
10. Szadok P, Bajorak A, Fluder R. Water intoxication in the course of lavor with oxytocin. Ginnek Pol. 2021;92(7) 534-535
11. Ophir E, Solt I, Odeh M, Bornstein J. Water Intoxication – a dangerous condition in labor and delivery rooms. Obstet Gynecol Surv. 2007 Nov; 62(11):731-8
12. Aldana-Valenzuela C, Prieto-Pantoja JA, Hernandez-Acevedo A. Oxytocin and syndromeof innapropriate secretion of antidiuretic hormone. Case report of early severe hyponatremia and literature review. Ginecol Obstet Mex. 20