

Recurrent Postoperative Delirium in a Young Female-to-Male Transgender Adult on Testosterone Gender Affirming Hormonal Therapy

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Introduction

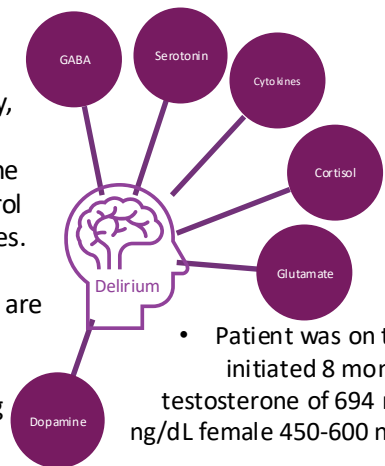
Case

Discussion

- Postoperative delirium affects up to 47% of surgical patients, representing a significant source of perioperative morbidity, mortality, and cost.
- The onset of delirium is typically noted in the PACU and is often managed with pain control and treatment of any metabolic disturbances.
- The exact etiology behind sex-based differences in incidence of post-op delirium are not clear, but hormonal differences are thought to play a role.
- In transgender patients on gender affirming hormonal therapy (GAHT), the hormonal environment is altered, and it remains unclear how this impacts anesthesia-related outcomes.

Postop delirium characterized by:

- Acute onset fluctuating change in mental status
- Reduced awareness of the environment
- Disturbance of attention



- 20-year-old female-to-male transgender patient on testosterone therapy with PMH of asthma, depression, anxiety, PTSD, GERD, and tobacco use presented for elective placement of IUD in the OR.

- Patient was on testosterone GAHT that was initiated 8 months prior; labs showed total testosterone of 694 ng/dL (reference range 2-45 ng/dL female 450-600 ng/dL male) approximately 4 months prior to surgery.
- Intubated for agitation in PACU with subsequent 3 days of repeated attempts to extubate until finally successful w/ no agitated behavior for the rest of hospital course.
- Same patient presented 2 years later for elective robotic-assisted hysterectomy. The patient continued on testosterone.
- The anesthesia team was aware of the patient's history and utilized dexmedetomidine and a multimodal analgesic approach with avoidance of ketamine.
- He underwent an uneventful general anesthetic but was again intubated in PACU for agitation.
- The patient was able to be extubated about 3 hours after the intubation and was discharged the next day.

- This case is an unusual example of recurrent postoperative delirium in a young patient who was not initially identified as high risk for delirium.
- However, this patient experienced significant complications as a result of their delirium, representing additional emotional trauma and financial burden.
- It is unclear what, if any, role exogenous testosterone therapy may play in the development of postop delirium.
- As acceptance and visibility of transgender individuals increases, it is expected that more patients on exogenous hormone therapy will present for procedures requiring anesthesia care.
- In the future, anesthesiologists may consider alternative anesthetic plans for these patients.
- More research into the effect of hormone therapies on anesthetic practice and potential perioperative complications is needed.

Risk Factors for Postop Delirium

Preoperative

- Older age
- Cognitive impairment
- Depression
- Male sex
- Polypharmacy
- Tobacco and alcohol abuse

Intraoperative

- Cardiac surgery
- Orthopedic surgery
- Use of anticholinergics
- Use of benzodiazepines

Postoperative

- Hypoxia
- Hypocarbia
- Sepsis

References:

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 Naimek, D. (2009). Predicting the onset of delirium in the postoperative patient. *Age and Ageing*, 38(4), 368-373.
 Rudolph, J. L., Jones, R. N., Rasmussen, L. S., Silverstein, J. H., Inouye, S. K., & Marcantonio, E. R. (2007). Independent vascular and cognitive risk factors for postoperative delirium. *The American Journal of Medicine*, 120(9), 807-813.

