REPORT DOCUMENTATION PAGE

1. REPORT DATE (DD-MM-YYYY) 10/21/2017
2. REPORT TYPE Poster
3. DATES COVERED (From - To) 10/21/2017-10/24/2017

4. TITLE AND SUBTITLE Symptomatic Overt Hypothyroidism Post Induction

5a. CONTRACT NUMBER
5b. GRANT NUMBER
5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S) Capt Daniel M Nguyen

5d. PROJECT NUMBER
5e. TASK NUMBER
5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
59th Clinical Research Division
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8. PERFORMING ORGANIZATION REPORT NUMBER 17391

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
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210-292-7141

10. SPONSOR/MONITOR’S ACRONYM(S)
11. SPONSOR/MONITOR’S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.


14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:
a. REPORT b. ABSTRACT c. THIS PAGE

17. LIMITATION OF ABSTRACT

18. NUMBER OF PAGES

19a. NAME OF RESPONSIBLE PERSON Clarice Longoria
19b. TELEPHONE NUMBER (Include area code) 210-292-7141

Form Approved OMB No. 0704-0188

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Symptomatic Overt Hypothyroidism Post Induction
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BACKGROUND
- 64 year old male ASA 3 with OSA, HTN, GERD, OA, chronic pain, hypothyroidism, depression, morbid obesity. CKD undergoing J & S posterior lumbar interbody fusion.
- Surgical history: LS L5 PUF ’02, Right TKR ’13, Left TKR ’13 without anesthesia complications.
- Stated adherence with the following medications: Levothroid 200mcg BID, Eliquis 70 mg qhs, Synthroid 75mcg qd, Nexium 40mg BID, Tramadol 50mg q6hrs, Percocet 5mg/325mg q8hrs.
- NADA, Social History: Lives at home with wife.
- Exercise Tolerance: 4 METS, able to walk 4 miles a day several months ago w/o SOB or CP before being limited by back pain.
- Fertile, Negative FSH - Denies CPP, DEX, FSH, edema, recent weight gain/weight loss, fatigue, weakness during pre-operative evaluation.
- Vital signs WNL, Airway/neck: Full beard, MP II, TM III FB Ht: 72", Wt: 149kg
- Anesthetic Plan: General Endotracheal Anesthesia in the prone position.
- Pt taken to the PACU and was alert and following commands with SBPs were 130s - 160s. Unable to maintain MAPs >50 mmHg, so decision made to cancel case and wake up patient.
- Radial arterial line inserted for hemodynamic monitoring.
- Heart: RRR no m/r/g
- Lungs: CTA, CBC, Chem
- Blood pressure unresponsive to IVF (150mg/dl Normocytic and Normochromic, 250cc 5% albumin).
- Pertinent Negative ROS: Denies CPP, DOE, SOB, edema, recent weight gain/weight loss, fatigue, back pain 2 yrs ago.
- History of Chronic Pain.
- 200mcg Synthroid for over 10 yrs.
- Pt reported missing Synthroid 75mcg daily for the past month due to "Surgeon told me not to." Did not know Synthroid was important.
- Upon confrontation with ROS(+): depression, dry skin, constipation, weight gain, weakness (chronic pain), +edema (chronic).
- TSH 5.5-25 mU/ml, Thyroxine Free Plasma <0.1 ng/dl.
- Upon confrontation with TSH values, patient reluctantly reports "missing a lot of doses" and "Didn't know Synthroid was important." Endocrinology Pt with overt hypothyroidism and should resume outpatient Synthroid 75 mcg daily and follow-up in 4 weeks with PCM to uptitrate as he was severely undosed.

POSTOPERATIVE COURSE
- During IM consult evaluation, medical history same as pre-op evaluation except for history of medication nonadherence.
- Contradiction between Pre Admission Unit and Internal Medicine medication reconciliation.
- Patient admitted to not taking his Synthroid 75mcg daily for the past month due to "Surgeon told me not to.
- R2S (+): depression, dry skin, constipation, weight gain, weakness (chronic pain), +edema (chronic).
- TSH 5.5-25 mU/ml, Thyroxine Free Plasma <0.1 ng/dl.
- Upon confrontation with TIT values, patient reluctantly reports "missing a lot of doses" and "Didn't know Synthroid was important." Endocrinology Pt with overt hypothyroidism and should resume outpatient Synthroid 75 mcg daily and follow-up in 4 weeks with PCM to uptitrate as he was severely undosed.

DISCUSSION
- CP: The most important adverse effects of hypothyroidism that may predict a bad surgical outcome are those affecting cardiovascular function.
- Hypothyroidism + elevated cholesterol levels and abnormal coagulation parameters that elevate risk for cardiovascular events in the perioperative period.
- CV impairment contributes to increased sensitivity of anesthetic agents due to decreased cardiac contractility, cardiac output, blood volume, O2 consumption and increased SVR from chronic hypothyremia.
- Pt's with known ischemic heart disease or presenting for coronary revascularization.
- Rapid thyroid replacement has the risk of increasing myocardial oxygen demand, and causing ischemia. However, delay in therapy may place the patient at risk of developing hypothyremia.
- The current consensus is that if a patient needs urgent cardiac revascularization, they should undergo the procedure before replacement.
- Many endocrinologists recommend starting at least low dose T4.

ENDO:
- BMI is only 55-60% of normal + inability to increase core temperature.
- Chronically decreased core temperature produces chronic peripheral vasodilatation + decrease in up to 1/10 of blood volume.
- Any peripheral vasodilatation or further decrease in circulating volume may precipitate cardiovascular collapse.
- Pre-warming OR, Loer Hugger on prior to patient arrival (similar to pediatric patients).
- Stress response is impaired in overt hypothyroidism, consider stress dose steroids 100mg hydrocortisone followed by 50mg q8h.
- RENAL & HEPATIC:
- decreased hepatic metabolism and decreased renal excretion of drugs coaxes increased sensitivity to anesthetic agents.

REFERENCES