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SIMULATION

Thyroid Storm

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ABSTRACT:

Audience: This simulation is designed to educate emergency medicine residents and medical students on the recognition and management for thyroid storm.

Introduction: Hyperthyroidism is a condition in which the thyroid gland produces too much thyroid hormone. This can usually be controlled with medications; however, 1%-2% of patients will develop thyroid storm, which is a life-threatening condition. If not treated emergently, thyroid storm can lead to end-organ damage and cardiovascular collapse.[1] Thyroid storm has a nonspecific presentation with signs and symptoms including hyperpyrexia, tachycardia, central nervous system (CNS) dysfunction, and gastrointestinal (GI) manifestations; all of these mimic many other more common emergency department (ED) presentations.[2] Therefore, it is important for medical providers to recognize associated symptoms, have a high suspicion for the diagnosis based on patient presentation, and quickly provide necessary treatment to stabilize the patient.

Educational Objectives: By the end of this simulation session, the learner will be able to: 1) understand the essential physical exam components necessary to evaluate for etiologies of acute encephalopathy, 2) review laboratory and imaging studies to obtain for evaluation of acute encephalopathy and/or suspected thyroid storm, as well as the rationale behind ordering each study, 3) identify underlying etiologies or pathologies for developing thyroid storm, 4) discuss treatment for thyroid storm.

Educational Methods: This session is conducted using high-fidelity simulation, followed by a debriefing session on evaluation for and treatment of thyroid storm. However, it could also be run as an oral boards case.

Research Methods: Our residents are provided a survey at the completion of the debriefing session so they may rate different aspects of the simulation, as well as provide qualitative feedback on the scenario.

Results: Feedback was largely positive, with a potential broad differential and specific treatment regimen cited as beneficial to review. The residents voiced appreciation at seeing a photograph of the patient's face at the beginning of the case, as the ophthalmopathy was difficult to reproduce on the mannequin.

Discussion: This is a cost-effective method for reviewing thyroid storm. Learners had a wide range of narrow versus broad differentials, as well as comfort level with treatment. Having the pharmacist unavailable to answer their questions caused them to rely on alternative sources of knowledge, typically, their cell phones. Our main take-away is to continue providing visual stimuli to enhance a physical exam in order to bolster psychological buy-in.

Topics: Medical simulation, endocrine emergencies, thyroid disorders, thyroid storm, hyperthyroidism.

USER GUIDE

List of Resources:

Learner Audience:
Medical students, interns, junior residents, senior residents

Time Required for Implementation:
Instructor Preparation: 30 minutes
Time for case: 20 minutes
Time for debriefing: 30 minutes

Recommended Number of Learners per Instructor:
3-4

Topics:
Medical simulation, endocrine emergencies, thyroid disorders, thyroid storm, hyperthyroidism.

Objectives:
By the end of this simulation session and debriefing, the learner will be able to:

1. Understand the essential physical exam components necessary to evaluate for etiologies of acute encephalopathy.
2. Review laboratory and imaging studies to obtain for evaluation of acute encephalopathy and/or suspected thyroid storm, as well as the rationale behind ordering each study.
3. Identify underlying etiologies or pathologies for developing thyroid storm.
4. Discuss treatment for thyroid storm.

Linked objectives and methods:
Thyroid storm is an uncommon ED presentation, and many of the symptoms are consistent with much more common ED diagnoses. The most important tool for diagnosis of this life-threatening condition is having a high clinical suspicion. This simulation scenario allows learners to review the patient presentation, highlights the importance of the prehospital history and of obtaining pertinent past medical history and a current medication list. Learners will have the opportunity to perform initial assessment and provide appropriate resuscitation of a critically ill patient (objective 1). They will work through a differential diagnosis for life-threatening causes of altered mental status and order appropriate tests and workup to narrow the differential (objective 2). Learners will need to identify possible underlying etiologies (objective 3) and initiate treatment (objective 4). Afterwards, there will be discussion about the etiology, pathophysiology, and mechanism of action of the pharmacologic treatment of thyroid storm (objectives 1-4).

Recommended pre-reading for instructor:
We recommend that instructors become familiar with the 2016 American Thyroid Association Guidelines for Diagnosis and Management of Hyperthyroidism.[1] Other suggested reading includes the materials listed below under "References/suggestions for further reading."

Results and tips for successful implementation:
This simulation was written to be performed as a high-fidelity simulation scenario but may also be used as a mock oral board case. We conducted this scenario approximately twelve times for fifty emergency medicine residents broken into groups of four during August-September 2018. The residents voiced appreciation at seeing a photograph of the patient's face at the beginning of the case, as the ophthalmopathy was difficult to reproduce on the mannequin. Depending on the desired level of autonomy, faculty may inform learners their pharmacist is at lunch, so they are unable to ask them recommended doses and instead must look them up on smart phones or provided computers. We typically do not allow pharmacists in simulation cases to make clinical suggestions, but may provide dosages for rarely-used medications.

References/suggestions for further reading:

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INSTRUCTOR MATERIALS

Case Title: Thyroid Storm

Case Description & Diagnosis (short synopsis): Patient is a 75-year-old female is brought in by emergency medical services (EMS) with complaint of agitation. A bystander in grocery store called 911 because the patient was agitated, yelling and swearing at bystanders. Patient is found to be in atrial fibrillation with rapid ventricular response and a low-grade fever. If requested, EMS or the nurse will provide the team with the patient's purse, which contains her home medications. Her physical exam is remarkable for a thyroid goiter and bilateral proptosis. Labs are remarkable for leukocytosis, a low TSH (thyroid-stimulating hormone), and an elevated free T4. Learners should suspect thyroid storm and administer propranolol, a thioamide, glucocorticoids, and arrange for iodine to be administered an hour after thioamide has been given. If beta-blockers are not ordered, the patient will become more tachycardic. If iodine is administered less than an hour after thioamide is administered, the patient will become more agitated and tachycardic until additional beta-blockade is administered. Team should have a low threshold to administer broad-spectrum antibiotics to cover possible underlying infection. The patient should then be admitted to the intensive care unit.

Equipment or Props Needed:
High-fidelity adult simulation mannequin
Foam or cotton balls to place under the mannequin's anterior neck skin to simulate a goiter
Angiocaths for peripheral intravenous access (18g, 20g, 22g)
Cardiac monitor
Pulse oximetry
Intravenous (IV) pole
Normal saline (1L x2)
Lumbar task trainer
Pill bottles with blank labels for patient's home medications: Citalopram 20mg daily, propylthiouracil (PTU) 100mg three times daily, Seroquel 150mg daily, hydrochlorothiazide 25mg daily.
Medications for treatment: 0.5-1mg IV propranolol, 60-80mg oral (PO) propranolol, esmolol drip, 600mg PO PTU, 20-25mg PO methimazole, 100mg IV hydrocortisone.

Confederates needed:
Primary nurse

INSTRUCTOR MATERIALS

Stimulus Inventory:

#1 Picture of Grave's ophthalmopathy and goiter
#2 ECG: Atrial fibrillation with rapid ventricular response
#3 Complete blood count (CBC)
#4 Basic metabolic panel (BMP)
#5 Liver function panel
#6 Ammonia
#7 Thyroid stimulating hormone (TSH)
#8 Free T4
#9 Lactate
#10 Troponin
#11 Salicylate level
#12 Acetaminophen level
#13 Ethanol level
#14 Urine toxicology screen
#15 Urinalysis
#16 Cerebrospinal fluid (CSF) studies
#17 Blood glucose
#18 Portable chest X-ray
#19 Head computed tomography (CT)

Background and brief information: Patient is a 75-year-old female brought in by EMS for agitation. A bystander in a grocery store called 911 because the patient was agitated, yelling and swearing at bystanders.

Initial presentation: Patient is a 75-year-old female who appears her stated age, but appears disheveled and diaphoretic. She is intermittently yelling at the nurse and anyone who comes near her bed.

How the scenario unfolds: Participants should perform a complete physical exam, including skin, back, and neurologic evaluations. If they ask about home medications, nursing can provide the team with the patient's purse, which includes her home medications. Participants should have a low threshold to evaluate and treat for other causes of encephalopathy or potential precipitants for her thyroid storm, which may include performing a lumbar puncture. The patient will initially be too agitated to have this performed and will require medication to do so. Once beta-blockade is ordered, her tachycardia will improve. If iodine is ordered less

than an hour after thioamide is administered, she will become more agitated and tachycardic until given additional beta-blockade. Case should be discussed with endocrinology and the intensivist, then admitted to the intensive care unit (ICU).

Critical actions:

1. Obtain a point-of-care blood glucose.
2. Review patient's home medications.
3. Evaluate for infection through physical exam and laboratory tests (urinalysis, chest X-ray).
4. Obtain a TSH and free T4.
5. Treat with a beta blocker, thioamide, and glucocorticoid.
6. Order iodine to be given an hour after thioamide is administered.
7. Admit to a critical care bed.

INSTRUCTOR MATERIALS

Case title: Thyroid Storm

Chief Complaint: Agitation

Vitals: Heart Rate (HR) 145 Blood Pressure (BP) 170/100 Respiratory Rate (RR) 18
Temperature (T) 100°F Oxygen Saturation (O_2Sat) 98% on room air

General Appearance: Diaphoretic, confused

Primary Survey:

- **Airway:** patent
- **Breathing:** clear to auscultation bilaterally
- **Circulation:** irregular tachycardic rhythm, 2+ symmetric radial pulses bilaterally, capillary refill 2-3 seconds

History:

- **History of present illness:** Unable to obtain from the patient due to her agitation, outside of paramedic report.
- **Past medical history**: unknown (however, paramedics have patient's medications if asked).
- **Past surgical history:** unknown
- **Patient's medications:** unknown
- **Allergies:** unknown
- **Social history:** unknown
- **Family history:** unknown

Secondary Survey/Physical Examination:

- **General appearance:** Diaphoretic, confused
- **HEENT:**
    - **Head:** within normal limits
    - **Eyes:** bilateral proptosis
    - **Ears:** within normal limits
    - **Nose:** within normal limits
    - **Throat:** within normal limits
- **Neck:** midline goiter
- **Heart:** irregular rhythm, tachycardic rate. Otherwise within normal limits

INSTRUCTOR MATERIALS

- **Lungs:** within normal limits
- **Abdominal/GI:** within normal limits
- **Genitourinary:** within normal limits
- **Rectal:** within normal limits
- **Extremities:** within normal limits
- **Back:** within normal limits
- **Neuro:** delirious and verbally agitated. Otherwise, within normal limits
- **Skin:** diaphoretic

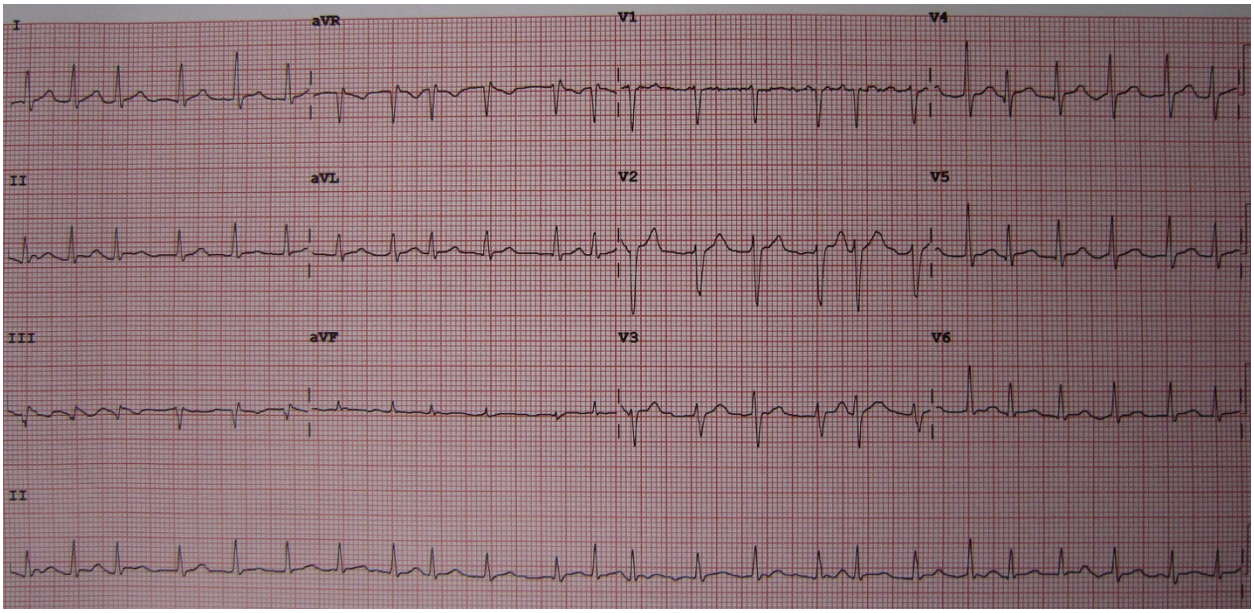
Results:

Picture of Grave's ophthalmopathy and goiter

Trobe, J. Photograph showing a classic finding of Graves' Disease, proptosis and lid retraction. In: Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Proptosis_and_lid_retraction_from_Graves%27_Disease.jpg. Published August 15, 2011. CC BY 3.0.

INSTRUCTOR MATERIALS

ECG: Atrial fibrillation with rapid ventricular response
Heilman, J. Rapid atrial fibrillation at a rate of 150. In: Wikimedia Commons. https://en.wikipedia.org/wiki/Atrial_fibrillation#/media/File:RapidAFib150.jpg. Published June 15, 2011. CC BY-SA 3.0.



INSTRUCTOR MATERIALS

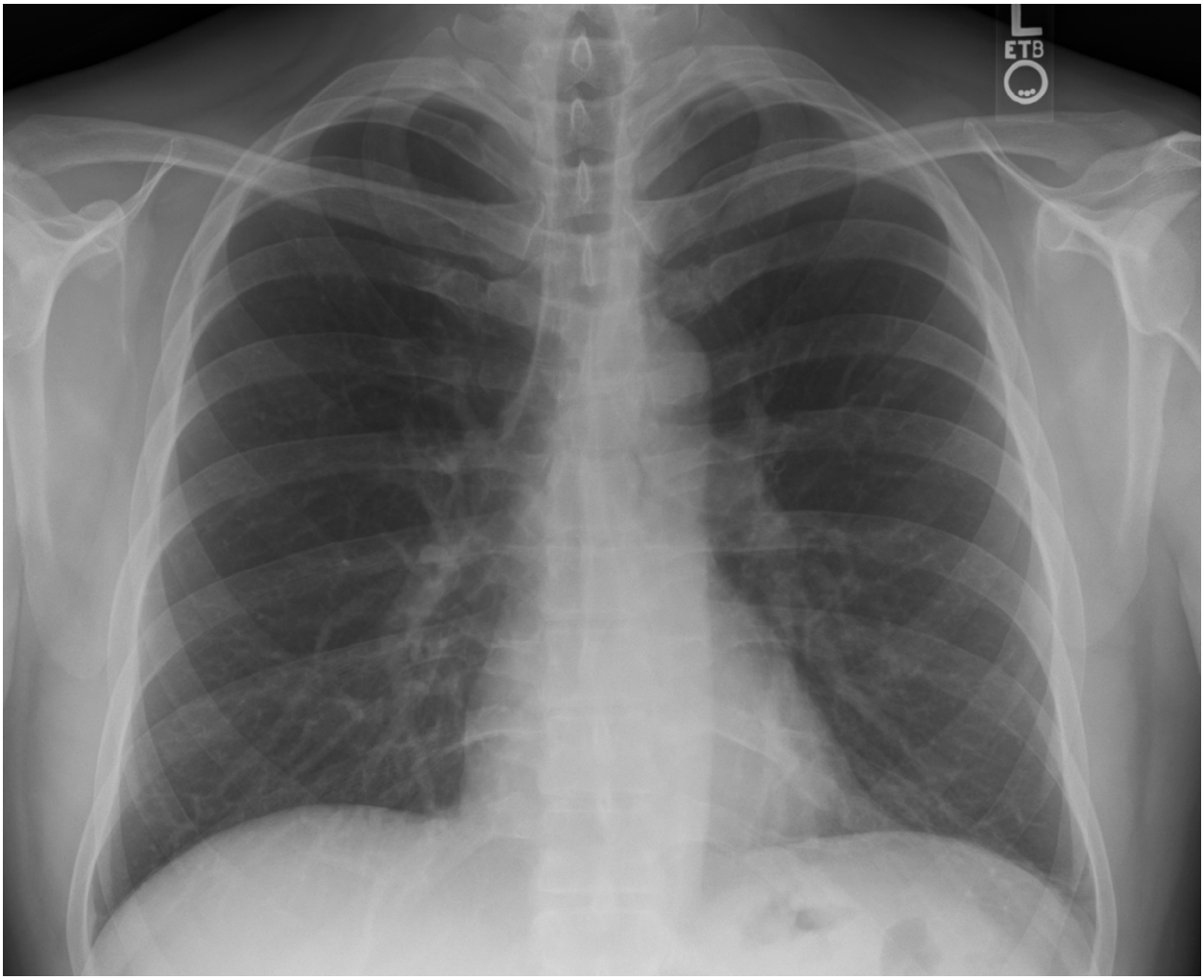
Complete blood count (CBC)	
White blood count (WBC)	15.4 x1000/mm^3
Hemoglobin (Hgb)	12.0 g/dL
Hematocrit (HCT)	33.7%
Platelet (Plt)	580 x1000/mm^3
Bands:	19%
Basic metabolic panel (BMP)	
Sodium	138 mEq/L
Chloride	99 mEq/L
Potassium	4.0 mEq/L
Bicarbonate (HCO_3)	18 mEq/L
Blood Urea Nitrogen (BUN)	30 mg/dL
Creatine (Cr)	1.1 mg/dL
Glucose	90 mg/dL
Calcium	8.0 mg/dL
Liver Function Tests (LFTs)	
Aspartate Aminotransferase (AST)	30 Units/L
Alanine Aminotransferase (ALT)	40 Units/L
Total Bilirubin (T bili)	0.8 mg/dL
Direct Bilirubin (D bili)	0.2 mg/dL
Albumin	3.0 g/dL
Alkaline Phosphate (alk phos)	100 Units/L
Total Protein:	7.0 g/dL
Ammonia	30 umol/L
Thyroid stimulating hormone (TSH)	0.001 mIU/L
Free thyroxine (free T4)	6.4 ng/dL
Lactic Acid	2.1 mmol/L
Troponin	0.09 mcg/L

INSTRUCTOR MATERIALS

Salicylate level	None detected
Acetaminophen level	None detected
Ethanol	<0.01 mg/dL
Urine Toxicology Screen	
Amphetamines	Negative
Barbiturates	Negative
Benzodiazepines	Negative
Cocaine	Negative
Methadone	Negative
Opiates	Negative
Oxycodone	Negative
PCP	Negative
THC	Negative
Urinalysis (UA)	
Leukocyte esterase	negative
Nitrites	negative
Blood	none
Ketones	2+
Glucose	none
Color	dark yellow
White blood cells (WBC)	5-10 WBCs/high powered field (HPF)
Red blood cells (RBC)	0-5 RBCs/HPF
Squamous epithelial cells	0-5 cells/HPF
Specific gravity	1.015
Blood glucose	100 mg/dL

INSTRUCTOR MATERIALS

Chest Radiograph
Stillwaterising. Chest X-ray PA. In: Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Chest_Xray_PA_3-8-2010.png. Published March 8, 2010. Public domain.



INSTRUCTOR MATERIALS

Non-contrast head CT

Ciscel, A. Normal CT scan of the head; this slice shows the cerebellum, a small portion of each temporal lobe, the orbits, and the sinuses. In: Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Head_CT_scan.jpg. Published 12 August 2005. CC BY-SA 2.0.

OPERATOR MATERIALS

SIMULATION EVENTS TABLE:

Minute (state)	Participant action/ trigger	Patient status (simulator response) & operator prompts	Monitor display (vital signs)
0:00 (Baseline)	Case begins, participants place the patient on the monitor and obtain history	Paramedics provide brief history	No vitals should be displayed until requested BP 170/100 HR 145 (afib) RR 18 O2 98% RA Temp 100F
5:00	Patient should be examined, home medications reviewed, and labs ordered	If the team does not ask paramedics for home medications, nursing can prompt: "Oh, the squad left her purse. Here it is." If team requests a lumbar puncture (LP), patient will be too agitated to be compliant until given a medication for agitation. Satisfactory response will be decided by the facilitator, given the medication and dose selected. If propranolol or esmolol are ordered, BP and heart rate will improve. If a beta-blocker is not ordered, patient's vitals will worsen	With beta-blockade BP 150/90 HR 110 (afib) RR 18 O2 98% RA Temp 100F Without beta-blockade BP 170/100 HR 160 (afib) RR 24 O2 98% RA Temp 100F
7:00	Propranolol or esmolol given, and thioamide and steroids are ordered	If iodine is ordered before an hour after thioamide is administered, patient will again become more tachycardic and agitated until more beta-blockade is administered (if given additional beta-blockade, see first set of vitals in 5:00 above for subsequent vitals) If learners call endocrinology or ICU prior to administering a thioamide, they will be busy and will not call back until treatment is completed If thioamide was ordered before endocrine or ICU is contacted, have the learners present the case,	If iodine is ordered less than an hour after thioamide given: BP 170/100 HR 150 (afib) RR 18 O2 98% RA Temp 100F

OPERATOR MATERIALS

Minute (state)	Participant action/ trigger	Patient status (simulator response) & operator prompts	Monitor display (vital signs)
		endocrinology/ICU can make final recommendations, then end scenario.	If iodine is ordered for an hour after thioamide: BP 150/80 HR 90 (afib) RR 16 O2 98% RA Temp 100F

Diagnosis:
Thyroid storm

Disposition:
Admit to the intensive care unit

DEBRIEFING AND EVALUATION PEARLS

Thyroid Storm

Pearls

- Thyroid storm is a not a diagnosis which ED providers will commonly encounter; however, it is important to be able to recognize quickly because the condition can be life-threatening. About 1%-2% of patients with hyperthyroidism will develop thyroid storm, but often the etiology of the progression to storm is unclear.[1]
- A focused history should be obtained, including use of amiodarone, inappropriate hormone ingestion for weight loss, recent surgery, or radioiodine therapy.
- The most common presenting signs and symptoms include hyperpyrexia, tachycardia, CNS dysfunction, and GI manifestations.[2-4]
- The workup should include tests to evaluate for an underlying etiology, such as infection, heat related illness, or toxidromes. These diagnostic studies may include blood cultures, urinalysis, a chest x-ray, and/or CT head.
- Initial pharmacologic treatment includes a thioamide, a non-selective beta blocker, as well as glucocorticoid. The American Thyroid Association recommends propylthiouracil (PTU) as the first-choice thioamide due to its additional benefit of blocking peripheral conversion of T4 to T3; however, methimazole is also an acceptable option.[3] PTU is administered as a 600mg oral loading dose followed by 250mg every 4 hours.[5]
- The most common non-selective beta blocker described in the literature is propranolol with a dose of either 1-2mg IV q15 minutes or 60-120 mg PO q6 hours.[2, 5]
- Glucocorticoids are used to block peripheral conversion of T4 to T3. They are given in the form of stress-dose steroids; 300mg hydrocortisone IV loading dose, followed by 100mg q8 hours.[5] This also serves to counteract adrenal insufficiency in the shock state.[2,4]
- Iodine is also included in the treatment; however, it is important to note that one must wait at least 1 hour after administration of the thioamide before giving iodine. This waiting period prevents further synthesis of new thyroid hormone before adequate blockade of the thyroid hormone synthesis pathway is achieved.[6, 7] Iodine can be given via Lugol's solution or SSKI. Dosing is 8 drops of Lugol's every 6 hours or 5 drops of SSKI every 6 hours.[2, 5] The typical supportive care measures of antipyretics, volume resuscitation, and blood pressure support also apply. Avoid administration of salicylates, since this may increase the level of free thyroid hormones
- Providers should keep in mind the pathophysiology of this condition when considering other medication use. Avoidance of anything that may increase sympathetic tone is important; i.e. albuterol or pseudoephedrine.[6]

DEBRIEFING AND EVALUATION PEARLS

- These patients require a final disposition of admission to an intensive care unit due to the potential for cardiovascular collapse as well as close monitoring and frequent medication dosing required during the acute phase of the illness.

Other debriefing points:

1. Closed-loop communication amongst team: was it used? Why or why not? Were there any implications of this during case execution?
    a. Closed-loop communication is important for effective and efficient resuscitation and medical care. This is especially true in situations that are high stress or low-frequency presentations that are not practiced often. Some of the most common medical errors are due to lack of communication. When there are multiple team members involved in patient care, closed-loop communication allows for safety checks. Thyroid storm is not a common presentation and as such the medications are not frequently encountered for this indication. Closed-loop communication between the pharmacist, prescribing physician, and nurse is essential to ensure appropriate medication delivery to the patient. It is important to share results with all team members. When lab results or imaging comes back, is critical to ensure everyone is aware of the current clinical picture. One example of good communication during resuscitation includes “if this…. then this….” scenarios. When a team member gives information and states “if this happens, then we will (do this),” the communication allows all members involved to be on the same page, and the resuscitation will be significantly more effective.
2. Did the team discuss a differential for emergent causes of altered mental status? Was the appropriate workup done to rule out other causes of the presentation or possibly underlying causes of the development of thyroid storm?
    a. Important to this scenario is discussing a list of differential diagnoses and the tests that will be ordered to narrow that differential. To avoid anchoring, the team should include workup for intracranial processes, toxidromes or ingestions, as well as infection. Additionally, thyroid storm may be precipitated when a patient with hyperthyroidism develops an underlying stimulus such as infection, diabetic ketoacidosis (DKA), medication change, recent surgery, or trauma to name a few. Recognition of these underlying precipitants and treatment of the underlying cause, in addition to the hyperthyroid state, is crucial to resolution of the illness.

SIMULATION ASSESSMENT

Thyroid Storm

Learner: _____

Assessment Timeline

This timeline is to help observers assess their learners. It allows observer to make notes on when learners performed various tasks, which can help guide debriefing discussion.

Critical Actions:	0:00
1. Obtain a point-of-care blood glucose 2. Review patient's home medications 3. Evaluate for infection through physical exam and laboratory tests (urinalysis, chest x-ray) 4. Obtain a TSH and free T4 5. Treat with a non-specific beta blocker, thioamide, and glucocorticoid 6. Order iodine to be given an hour after thioamide is administered 7. Admit to a critical care bed	

SIMULATION ASSESSMENT

Thyroid Storm

Learner: _____

Critical Actions:

- ☐ Obtain a point-of-care blood glucose
- ☐ Review patient's home medications
- ☐ Evaluate for infection through physical exam and laboratory tests (urinalysis, chest x-ray)
- ☐ Obtain a TSH and free T4
- ☐ Treat with a non-specific beta blocker, thioamide, and glucocorticoid
- ☐ Order iodine to be given an hour after thioamide is administered
- ☐ Admit to a critical care bed

Summative and formative comments:

SIMULATION ASSESSMENT

Thyroid Storm

Learner: _____

Milestones assessment:

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
1	**Emergency Stabilization (PC1)**	☐ Did not achieve Level 1	☐ Recognizes abnormal vital signs	☐ Recognizes an unstable patient, requiring intervention Performs primary assessment Discerns data to formulate a diagnostic impression/plan	☐ Manages and prioritizes critical actions in a critically ill patient Reassesses after implementing a stabilizing intervention
2	**Performance of focused history and physical (PC2)**	☐ Did not achieve Level 1	☐ Performs a reliable, comprehensive history and physical exam	☐ Performs and communicates a focused history and physical exam based on chief complaint and urgent issues	☐ Prioritizes essential components of history and physical exam given dynamic circumstances
3	**Diagnostic studies (PC3)**	☐ Did not achieve Level 1	☐ Determines the necessity of diagnostic studies	☐ Orders appropriate diagnostic studies. Performs appropriate bedside diagnostic studies/procedures	☐ Prioritizes essential testing Interprets results of diagnostic studies Reviews risks, benefits, contraindications, and alternatives to a diagnostic study or procedure
4	**Diagnosis (PC4)**	☐ Did not achieve Level 1	☐ Considers a list of potential diagnoses	☐ Considers an appropriate list of potential diagnosis May or may not make correct diagnosis	☐ Makes the appropriate diagnosis Considers other potential diagnoses, avoiding premature closure

SIMULATION ASSESSMENT

Thyroid Storm

Learner: _____

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
5	**Pharmacotherapy (PC5)**	☐ Did not achieve Level 1	☐ Asks patient for drug allergies	☐ Selects an medication for therapeutic intervention, consider potential adverse effects	☐ Selects the most appropriate medication and understands mechanism of action, effect, and potential side effects Considers and recognizes drug-drug interactions
6	**Observation and reassessment (PC6)**	☐ Did not achieve Level 1	☐ Reevaluates patient at least one time during case	☐ Reevaluates patient after most therapeutic interventions	☐ Consistently evaluates the effectiveness of therapies at appropriate intervals
7	**Disposition (PC7)**	☐ Did not achieve Level 1	☐ Appropriately selects whether to admit or discharge the patient	☐ Appropriately selects whether to admit or discharge Involves the expertise of some of the appropriate specialists	☐ Educates the patient appropriately about their disposition Assigns patient to an appropriate level of care (ICU/Tele/Floor) Involves expertise of all appropriate specialists
9	**General Approach to Procedures (PC9)**	☐ Did not achieve Level 1	☐ Identifies pertinent anatomy and physiology for a procedure Uses appropriate Universal Precautions	☐ Obtains informed consent Knows indications, contraindications, anatomic landmarks, equipment, anesthetic and procedural technique, and potential complications for common ED procedures	☐ Determines a back-up strategy if initial attempts are unsuccessful Correctly interprets results of diagnostic procedure

Standardized assessment form for simulation cases. JETem © Developed by: Megan Osborn, MD, MHPE; Shannon Toohey, MD; Alisa Wray, MD
Ferretti N, et al. Thyroid Storm. JETem 2019. 4(3):S1-24. https://doi.org/10.21980/J8XD03

SIMULATION ASSESSMENT

Thyroid Storm

Learner: _____

	Milestone	Did not achieve level 1	Level 1	Level 2	Level 3
20	**Professional Values (PROF1)**	☐ Did not achieve Level 1	☐ Demonstrates caring, honest behavior	☐ Exhibits compassion, respect, sensitivity and responsiveness	☐ Develops alternative care plans when patients' personal beliefs and decisions preclude standard care
22	**Patient centered communication (ICS1)**	☐ Did not achieve level 1	☐ Establishes rapport and demonstrates empathy to patient (and family) Listens effectively	☐ Elicits patient's reason for seeking health care	☐ Manages patient expectations in a manner that minimizes potential for stress, conflict, and misunderstanding. Effectively communicates with vulnerable populations, (at risk patients and families)
23	**Team management (ICS2)**	☐ Did not achieve level 1	☐ Recognizes other members of the patient care team during case (nurse, techs)	☐ Communicates pertinent information to other healthcare colleagues	☐ Communicates a clear, succinct, and appropriate handoff with specialists and other colleagues Communicates effectively with ancillary staff