ACEP Simulation Case **SIMULATION CASE TITLE: Peritonsillar Abscess** **AUTHOR: Michael Jones, MD** **Reviewer: Javier Rosario, MD**	
PATIENT NAME: Danny Potter **PATIENT AGE: 24** **CHIEF COMPLAINT: Sore throat**	
Brief narrative description of case *Include the presenting patient chief complaint and overall learner goals for this case*	24 year old male with no past medical history presents to the emergency department for a sore throat. The goals for this case are to accurately diagnose and safely manage a patient with peritonsillar abscess and to incorporate bedside ultrasound to aid in diagnosis and management.
Primary Learning Objectives *What should the learners gain in terms of knowledge and skill from this case? Use action verbs and utilize Bloom's Taxonomy as a conceptual guide*	- Demonstrate the ability to construct a sufficient differential diagnosis that includes peritonsillar abscess for a patient with a seemingly innocuous chief complaint. - Evaluate the patient with ultrasound and correctly interpret images to make a correct diagnosis. - Create a management plan that involved ultrasound to manage the patient safely and effectively.
Critical Actions *List which steps the participants should take to successfully manage the simulated patient. These should be listed as concrete actions that are distinct from the overall learning objectives of the case.*	- Take a history and identify at least one of the following symptoms: occasional drooling, difficulty opening mouth or change in voice. - Perform a physical exam, noting peritonsillar swelling with uveal deviation. - Perform bedside ultrasound to identify abscess. - Perform bedside ultrasound to identify carotid artery. - Manage the patient appropriately with either aspiration or incision and drainage.
Learner Preparation *What information should the learners be given prior to initiation of the case?*	24 year old male presents to the emergency department with a sore throat

Required Equipment *What equipment is necessary for the case?*	Tongue depressor Ultrasound Materials for procedure (benzocaine spray, lido (?), laryngoscope, needle, syringe, scalpel

INITIAL PRESENTATION			
Initial vital signs	HR: 98 BP: 139/90 RR: 22 O_2SAT: 98% RA T: 38.8 ^oC		
Overall Appearance *What do learners see when they first enter the room?*	A 24 year old male sitting on the side of the bed with his hands on his knees.		
Actors and roles in the room at case start *Who is present at the beginning and what is their role? Who may play them?*	Besides the patient, one friend can be in the room, but it is not necessary		
HPI *Please specify what info here and below must be asked vs what is volunteered by patient or other participants*	Sore throat has been ongoing now for 12 days. It has gradually gotten worse. It has become harder and harder to swallow. I started to feel like maybe I had a fever yesterday, but I don't have a thermometer, so I never checked. I kept thinking it was just a virus, but this seems worse than any other virus I've had. Must be asked: -I have just been drinking because I can't open my mouth wide enough to eat anything. -This morning, I noticed I was drooling for no reason. I guess because it's been so hard to swallow. -I think my voice sounds different (friend can confirm)		
Past Medical/Surg History	**Medications**	**Allergies**	**Family History**
None	None	None	Non contributory
Physical Examination			
General	Sitting up. But no acute distress		
HEENT	Head: Normal Ears: Normal Eyes: Normal Nose: Normal		

	Throat: Trismus is present. Erythematous oropharynx, peritonsillar swelling of right side. Uveal deviation to the left.
Neck	No anterior neck tenderness. No submandibular swelling. Mild pain with extreme extension of neck.
Lungs	Normal
Cardiovascular	Normal
Abdomen	Normal
Neurological	Normal
Skin	Normal
GU	Normal
Psychiatric	Normal

1) **SCENARIO STATES, MODIFIERS AND TRIGGERS**
2) *This section should be a list with detailed description of each step than may happen during the case. If medications are given, what is the response? Do changes occur at certain time points? Should the nurse or other participant prompt the learners at given points? Should new actors or participants enter, and when? Are there specific things the patient will say or do at given times?*

PATIENT STATUS	**LEARNER ACTIONS, MODIFIERS & TRIGGERS TO MOVE TO THE NEXT STATE**	
1. Baseline State Rhythm: NSR HR: 98 139/90 RR: 22 O_2SAT: 98% RA T: 38.8 ^oC	Learner Actions ● Take history ● Perform physical exam	Modifiers *Changes to patient condition based on learner action* • If learner fails to recognize critical historical elements and exam findings, patient will have a severe coughing fit, turn blue, and go apneic and blue in the face. Triggers *For progression to next state* ● If based on history and physical exam, the learner is identifying the key elements, proceed without deterioration of patient

2. Rhythm: NSR HR: 98 139/90 RR: 22 O_2SAT: 98% RA T: 38.8 ^oC	Learner Actions ● Perform ultrasound ● Ask learner to describe technique for obtaining extra-oral view. ● Ask learner to describe technique for obtaining intra-oral view. - Consent - Use probe cover • Correctly diagnose PTA	Modifiers • Be sure the patient describe the ultrasound technique they are going to do. Triggers ● After appropriate consent from the patient to perform the ultrasound, the images can be shown
3. Rhythm: NSR HR: 89 125/86 RR: 18 O_2SAT: 98% RA T: 37.8 ^oC after Tylenol	Learner Actions ● Begin management: – IV access (recommended) – Give Tylenol or antipyretic – Give steroid (Decadron 10 mg IV) – Consent for I and D ● Perform I and D – Consider using laryngoscope for light and tongue depression – Anesthetize (benzocaine spray +/- lidocaine) – Use 18 gauge needle with cover guard or scalpel with cover guard – Aspirate or incise at point of maximal fluid pocket as identified by ultrasound. – May attempt dynamic guidance as well, but that can be difficult – Utilize suction – Reevaluate the patient ● Discharge on antibiotics: – Clindamycin 300 q6 7-10d – Augmentin 875 q12 7-10d – Pen V 500 + Metronidazole 500 q6 7-10 d	Modifiers • Patient will not tolerate if no prior pain meds given • Patient will not tolerate if no local anesthetic • Aspiration or I and D will not be successful if no ultrasound is used to identify location of collection and carotid. • View will be very difficult if laryngoscope not used • Accidental trauma to carotid if no needle or scalpel guard is used. Triggers ● END OF CASE (after reevaluation of patient and patient reports improvement and physician decides to discharge with antibiotic prescription)

SUPPORTING DOCUMENTS, LAB RESULTS AND MULTIMEDIA	
Lab Results	WBC: 14 Elevated neutrophil/lymphocyte ratio Normal electrolytes Normal lactate (if ordered)

EKG	NSR at rate of 98 with no ischemia
CXR CT imaging	CXR: Only comment on lung fields as normal. CT: If ordered: 2 cm x 2 cm right peritonsillar abscess. Nothing else acute
Ultrasound Video Files	

SAMPLE QUESTIONS FOR DEBRIEFING
1) What are key aspects of this patients presentation that prompted further workup/investigation? (trismus, hot potato voice, drooling, peritonsillar swelling with uveal deviation) **2) What are the main modalities for diagnosing peritonsillar abscess? (physical exam, extra-oral ultrasound, intra-oral ultrasound, CT)** **3) What should be a key element of the ultrasound exam for PTA? (color doppler to confirm no color flow in abscess and to confirm the location of the carotid artery—there should be a measurement to identify distance from the superficial skin and confirm save incision site and depth)** **4) What can you do if you can do an intra-oral ultrasound, and you can't adequately visualize using the linear probe? (use the curvilinear probe)** **5) What ways can you facilitate the procedure if necessary? (additional pain meds, having the patient hold the laryngoscope or suction, procedural sedation/anxiolysis if necessary)**

Ideal Scenario Flow

Perform history and physical exam. Recognize concern for peritonsillar abscess.
Perform bedside ultrasound by first consenting the patient, identifying the fluid collection, and using color to confirm no flow in abscess and location of carotid with distance from superficial mucosa.
Perform aspiration or I and D with needle or scalpel guard. Be sure to anesthetize first with benzocaine spray and lido (with epi). Have the patient participate by holding the blade or suction. Use procedural sedation/anxiolysis as a last resort.
Discharge on oral antibiotics to prevent recurrence.

Anticipated Management Mistakes

Failure to identify diagnosis of PTA.
Failure to perform bedside ultrasound.
Not considering using the curvilinear probe for extra-oral imaging
Failure to confirm no flow in abscess and confirm location of carotid artery.

Inadequate anesthesia/analgesia.
Failure to prescribe antibiotics upon discharge.