

Case Study

You have been paged to a 14C1-Drowning, Alert w/ Abnormal Breathing. Per CAD notes, patient is a 13 y/o female who was boating in Lake Monona when she reportedly fell overboard. She was not wearing a lifejacket and was reportedly underwater for "a few minutes." On your arrival, you find a 13 y/o female on the dock, awake and alert with frequent, forceful coughing. She appears tachypneic, and it is unclear if she is cold or if she has mild perioral cyanosis. The patient reports that she is not able to swim, but that she is "fine now." There are approximately 6 other teenagers with her, who report they circled around with the boat as soon as they realized she had gone overboard, and they believe she was underwater for only a short time. Nobody is able to recall who was piloting the boat, or to whom the watercraft belongs.

Police are on scene and attempting to interview those involved and get ahold of the parents. They have not been able to get in touch with the patient's parents or guardians to this point. The patient does not wish to be transported.

Discussion

- What should your next treatment be for this patient?
- What is the appropriate disposition for this patient? Why?
- The parents are contacted and defer to your best judgement - does this change your disposition plan for this patient?

Upcoming Events and Training

SSM Health Monthly Training: When the Smoke Clears: Blast injuries and MCIs

Monthly training will be pre-recorded and shared at the beginning of July

July 17th - UW Health Monthly Training: ECPR

Register at uwhealth.org/een



PulsePoint Professional Responder

Professional Responder is a second layer to the PulsePoint program that allows approved, licensed EMS personnel to receive alerts for cardiac arrests that take place in private residences. Sign up to register here:

<https://www.surveymonkey.com/r/VT5YNJM>

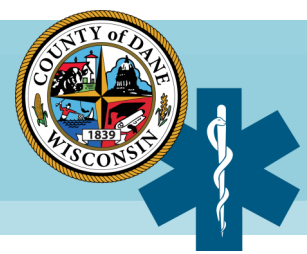
June Viz Quiz: Don't Be Too Rash

You are responding to a private residence for a 26-Alpha-23 – Rash / Skin Disorder for a 9 year old male who developed a fever and a red rash on his arms and legs - including the palms and soles of the feet - earlier today. You arrive on scene to find your patient sitting at the kitchen table, awake and alert. From the doorway, he appears well and in no distress. His Mother tells you that he does not have any medical problems, is up to date on his vaccinations and has not been ill recently. The patient states he has a headache, nausea, stomach pain and generalized muscle aches. He does state that he went hiking "up North" with his Father over the weekend, but does not recall any exposure to poisonous plants, new detergents / soaps and does not recall being bitten. The patient has a FSBS of 120, BP of 120/60, HR in the 110's, RR 19 and SpO2 of 99%. Your partner rolls their eyes after hearing the same story from his Mother, and reminds you that it's your night to make dinner for the station. You assess the to the right. You believe that underlying cause of this patient's history and EKG is consistent with:



- A. Measles and Requires Transport
- B. Rocky Mountain Spotted Fever and Requires Transport
- C. Lyme Disease and Requires Transport
- D. Measles and Should be Signed Off
- E. Benign Viral Exanthem and Should be Signed Off

Submit your answer at <https://www.surveymonkey.com/r/XCPJ272>.



Case Study Continued...

This is a Non-Fatal Drowning incident, and the patient has Respiratory Distress

- Drowning accounts for at least 360,000 deaths annually worldwide, including approximately 5,400 deaths annually in the United States.
- If there is any possibility that there was an aspiration, the patient must be observed for 6 hours.
- Cardiac dysrhythmias should be evaluated for, as they can be both the cause of and an effect of drowning. If at any time their pulse ox, respirations, cardiac rhythm, or mental status changes, they must be reassessed with radiography and/or ABG.
- Both salt water and fresh water wash out and destroy surfactant, disrupt the alveolar-capillary membrane, and increase its permeability.
- The fluid shifts often result in non-cardiogenic pulmonary edema and the acute respiratory distress syndrome (ARDS)
- Aspirating 1-3 mL/kg of body weight is enough to affect the pulmonary surfactant and affect the body's ability to exchange gases.
- 30-50% of non-fatal drownings involve EtOH; if your blood alcohol level is >150mg/dL, your odds ratio of death is 37.4 over sober controls.
- Patients can have either acute lung injury or adult respiratory distress syndrome after non-fatal drowning, and these conditions have high mortality.
- Apart from positive pressure ventilation, not much seems to help. Intubate patients as needed. Use standard lung protective tidal volumes (6mL/kg), and keep their oxygen saturation between 88-95%.
- In the US, drowning is a major cause of accidental death among persons under the age of 45 years, and a leading cause in children under five years of age in states where swimming pools or beaches are readily accessible (eg, California, Arizona, and Florida).
- Approximately 7% of child drownings appear related to child abuse or neglect.
- Adult drownings tend to occur at rivers, lakes, and beaches/ocean.

Further Discussion:

Consensus and society guidelines have standardized the definitions related to drowning to ensure a consistent approach to reporting and studying these incidents. Terms such as "near-drowning," "wet drowning," and "dry drowning" should not be used. Accepted definitions include the following:

Drowning - The process of experiencing respiratory impairment from submersion or immersion in liquid.

Fatal drowning - A drowning event with a fatal outcome

Non-fatal drowning - A drowning event in which the process of respiratory impairment is stopped before death, and the victim survives.

Rescue - An intervention that prevents progression to drowning in an individual who is submerged but at no time develops respiratory symptoms or impairment.

Take Away for EMS Providers

- This patient need to be transported and observed for several reasons: pediatric patient, cough/respiratory distress, need for prolonged observation, unclear EtOH status.
- Even during summer months, a temperature is critical in non-fatal drowning patients - hypothermia can occur even in water that "feels nice"!
- Cold water swimming with attempted breath holding can precipitate fatal ventricular dysrhythmias, especially in patients with congenital or acquired long-QT syndrome. EKG's are important!
- If a patient is experiencing a dysrhythmia, before applying AED pads, the patient's wet clothes need to be removed and the chest, neck and upper abdomen dried (the care team should ideally be dry as well).

Sources: <https://litfl.com/drowning-and-adult-respiratory-distress-syndrome/>; https://www.uptodate.com/contents/drowning-submersion-injuries?search=non%20fatal%20drowning&source=search_result&selectedTitle=1%7E150&usage_type=default&display_rank=1; Buggia M, Canham L, Tibbles C, Landry A. Near drowning and adult respiratory distress syndrome. J Emerg Med. 2014 Jun;46(6):821-5. [PMID 24642043]; https://www.uptodate.com/contents/drowning-submersion-injuries?search=non%20fatal%20drowning&source=search_result&selectedTitle=1%7E150&usage_type=default&display_rank=1