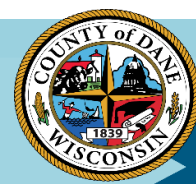


# Dane County EMS Newsletter

February, 2024



## Upcoming Events and Training

**3/7, 6-8pm SSM Health Monthly Training - The First 28 Days: Neonatal Emergencies**

Register for in-person [here](#); Register for virtual [here](#)

**3/20, 6pm UW Health Monthly Training - Neurological Emergencies**

Register to attend at [uwhealth.org/een](http://uwhealth.org/een)

**3/20, 5:30pm Dane County CEVO 5 Classroom (Virtual)**

Register at [this link](#)

## Protocol Quiz

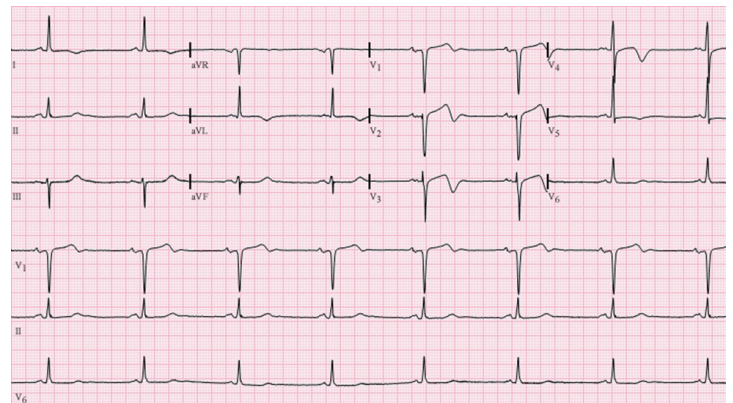
Test your knowledge on the Dane County EMS Protocols by completing the [December Newsletter Protocol Quiz](#). [Email us](#) for the answers and where to find them in the protocols!

## February Viz Quiz

You are responding to a private residence for a 10-Delta-2 Chest Pain, Difficulty Speaking for a 49 year old male who developed crushing, substernal chest pain while arguing with his significant other. 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 teenage son tells you that he developed chest pain while arguing with his significant other. The patient denies any medical history, and states that his chest pain has completely resolved by the time of your arrival. The patient has an BS of 100, BP of 120/60, HR in the 60's, RR 16 and SpO2 of 99%. Your partner rolls their eyes after hearing the same story from his significant other, then hands you his 12-lead.

You believe the underlying cause of this patient's history and EKG is consistent with:

- A. Takotsubo Cardiomyopathy and Requires Transport
- B. Brugada Syndrome and Requires Transport
- C. Inferior STEMI and Requires Transport
- D. Wellen's Syndrome and Requires Transport
- E. Benign Early Repol and Should be Signed Off



Submit your answers at <https://www.surveymonkey.com/r/FX98SK2> for the chance to win a prize!

## January Viz Quiz Follow Up

Which capnography waveforms seen post-ROSC indicate a kinked or dislodged ET tube?

Answer: B

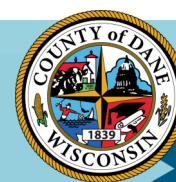


Waveform capnography is the gold standard for initial and ongoing confirmation of advanced airway placement.

During patient transport, the ETT is at risk for dislodgement for a number of reasons including road conditions, lack of adequate tube securement or patient movement. Continuous waveform capnography is an invaluable resource to help ensure the safety and ventilator status of the patient. A study examining the ability of paramedics to recognize and address ETT dislodgement in simulation found the detection of dislodgement by providers using capnography was two minutes, compared to four minutes by providers without access to capnography.

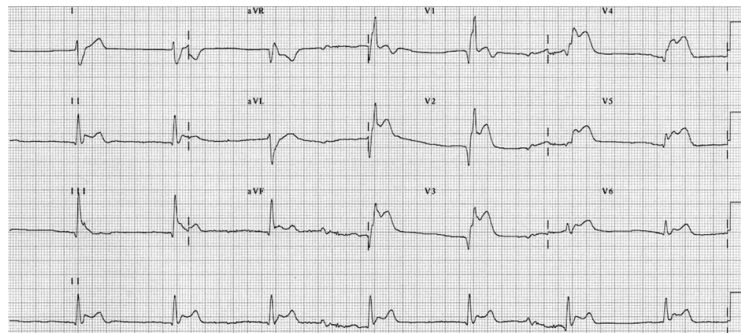
Reference: <https://www.iems.com/patient-care/capnography-provides-bigger-physiological-picture-to-maximize-patient-care/>; Langan ML, Ching K, Northrup V, et al. A randomized controlled trial of capnography in the correction of simulated endotracheal tube dislodgement. Acad Emerg Med. 2011;18(6):590-596.

Congratulations to Bill from Middleton EMS for winning the January Viz Quiz!



## Case Study

You have been paged to a 10D2-Chest Pain, Difficulty Speaking. Per CAD notes, patient is a 49 y/o female who developed crushing, substernal chest pain while arguing with her significant other. You arrive on scene to find your patient sitting in a recliner in her living room, awake and alert. From the doorway, she is notably diaphoretic and appears short of breath. Her teenage son tells you that there was an argument between the patient and her significant other when she developed chest pain and began complaining of difficulty breathing. The patient endorses a history of well-controlled HTN, otherwise denies medical problems. Dispatch instructed her to take 4 baby ASA before your arrival. You obtain the following EKG while still in the patient's home.



### Discussion:

- What should your next treatment be for this patient?
- The monitor is reading \*\*\*Acute MI\*\*\* - do you agree?
- The patient wishes to be transported to an ED that does not have a cath team available; how do you respond?

### This patient has Takotsubo Cardiomyopathy, also known as "Broken Heart Syndrome"

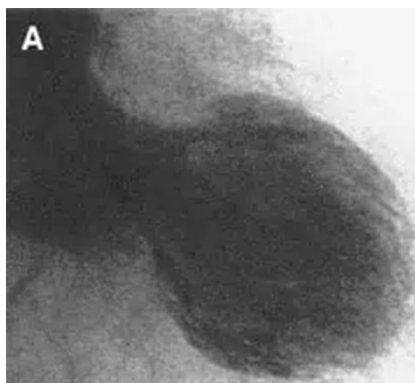
- Originally described in Japan in 1990, the condition is named after the Takotsubo pot, a Japanese basket used to catch octopi
- This condition causes Left Ventricular wall motion changes due to severe emotional or physical stress; it resolved completely.
- The patient will have chest pain consistent with ischemia, and there will be EKG changes mimicking STEMI and may result in elevated troponin levels.
- Angiography is required to differentiate OMI from Takotsubo Cardiomyopathy

### Pathophysiology

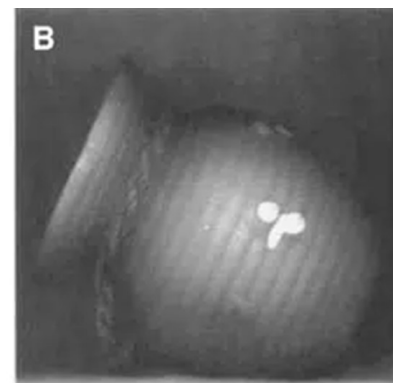
- It is not fully understood, but believed to be related to a catecholamine surge during acute stress that causes microvascular spasm and Left Ventricular wall dyskinesia (abnormal movement)
- In an estimated 1/3 of cases, there is a Left Ventricular outflow tract obstruction that results in increased LV workload and "ballooning" of the ventricle.

### Take Away for EMS Providers

- It is difficult to distinguish from STEMI and there are no criteria to differentiate the two - activate the cath lab as per normal protocols
- After the diagnosis is confirmed in cath lab, treatment is supportive, and patients return to normal within 3 weeks
- Takotsubo Cardiomyopathy can happen again! TC has a recurrence rate of 1-2% after 1 year and 4-5% after 5-6 years<sup>1</sup>.
- 90% of cases worldwide are in post-menopausal women, usually with emotional stress. Cases in men are more likely associated with physical stress<sup>2</sup>.



Ventriculogram during cath



Japanese Octopus Pot ("Takotsubo")

1. Ogunleye, O, Iqbal, A, Chilakala, A, et al. "Recurrent Takotsubo Cardiomyopathy: A Rare Event with Variable Triggers". J Am Coll Cardiol. 2023 Mar, 81 (8\_Supplement) 3487. [https://doi.org/10.1016/S0735-1097\(23\)03981-1](https://doi.org/10.1016/S0735-1097(23)03981-1)

2. <https://itfl.com/takotsubo-cardiomyopathy-ecg-library/>