



UNIVERSITY of CALIFORNIA, SAN DIEGO

MEDICAL CENTER HYPERBARIC DEPARTMENT

Reverse Takotsubo Cardiomyopathy in a Scuba Diver

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Background

- Takotsubo cardiomyopathy is characterized by transient cardiac dysfunction, often triggered by emotional or physical stress, and sometimes referred to as “broken heart syndrome.”
- It is typically characterized by hypokinesis of the apex, described as “apical ballooning,” resembling an octopus trap on echocardiogram and ventriculogram.
- Rarely, patients present with reverse Takotsubo cardiomyopathy, which demonstrates preservation of apical function and hypokinesis of the basal and midventricular segments.
- To our knowledge, this is the first reported case of reverse Takotsubo cardiomyopathy following a scuba dive and exertional swimming.



<http://sky.geocities.jp/heigun2008/takotsubo.htm>

Case

- 70 yo female presented with chest pain after a scuba dive to 65 feet for 28 min on air.
- Dive was uneventful, with controlled ascent.
- While swimming back to the boat in moderately heavy surf, she developed chest pain and shortness of breath and required assistance to get back on the boat.
- She was placed on O₂ via NRB and taken to the Emergency Department (ED).

Clinical Course

Emergency Department

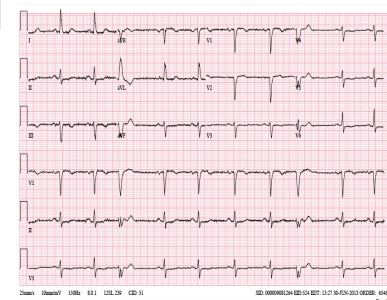
- Chest pain and dyspnea improved prior to arrival in ED with O₂ and nitroglycerin.
- Physical exam normal except for error on MMSE on “serial 7s”
- EKG with borderline ST elevation, troponin 0.23 ng/mL (normal <0.01), total CK 120.
- Bedside echocardiogram showed septal hypokinesis and patient was taken for emergent cardiac catheterization.

Outcome

- Cardiac catheterization did not show any significant coronary artery atherosclerosis, but did demonstrate hypokinesis of the left ventricle.
- Echocardiogram showed depressed systolic function (EF 31%) and preservation of systolic function at the apex and posterior wall, but otherwise global hypokinesis.
- She was diagnosed with reverse Takotsubo cardiomyopathy, thought to be induced by extreme exertion while swimming after scuba diving.
- She remained stable in the hospital and was discharged home. She was encouraged not to dive, except under very easy dive conditions.

Conclusion

- The stress of exercise associated with diving and swimming can induce reverse Takotsubo cardiomyopathy
- This condition may mimic coronary artery atherosclerotic disease, pulmonary edema, decompression sickness, or arterial gas embolism



References

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