Hypothermia with J (Osborne) waves

David H. Spodick

University of Massachusetts Medical School

Let us know how access to this document benefits you.
Follow this and additional works at: https://escholarship.umassmed.edu/oapubs

Part of the Cardiology Commons

Repository Citation

This material is brought to you by eScholarship@UMassChan. It has been accepted for inclusion in Open Access Publications by UMass Chan Authors by an authorized administrator of eScholarship@UMassChan. For more information, please contact Lisa.Palmer@umassmed.edu.
Hypothermia With J (Osborne) Waves

David H. Spodick, MD, DSc

click an author to search for more articles by that author

A 40-year-old woman was found unconscious outside on a bitterly cold day; her body temperature was 83°F. She was never able to provide a coherent history. J (Osborne) waves are seen at the QRS-T junctions, especially in leads II, III, aVF, and V₂–V₆ (arrows).

Osborne waves are characteristic of deep hypothermia, whether accidental (as seen here) or medically induced, in both humans and animals. A similar configuration may occur in severe hypercalcemia, nervous system disorders, and other conditions. Hypothermia affects both depolarization and repolarization, and the QT interval is prolonged. The mechanism of production of J waves is poorly understood, but they may be related to the transmural potential gradient at the onset of repolarization, which has been seen in vitro. J-wave size has been related to the degree of hypothermia.