Pacemaker failure as a cause of sudden death

Daniel P. Morin^{1,2}

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I read with interest the Association for European Cardiovascular Pathology's *Guidelines for Autopsy Investigation of Sudden Cardiac Death*, recently authored by Basso et al. [1]. While discussing the value of knowing the decedent's personal history and family history, the authors mention that the presence of cardiac implanted electronic devices (CIEDs; pacemakers and implantable cardioverter-defibrillators [ICDs]) can be especially valuable. While finding such a device during autopsy certainly provides a clue to the forensic pathologist that significant cardiac pathology may have played a role in the death, CIEDs can serve as much more than just a hint.

The pathologist has the opportunity not only to note the presence of a CIED but also to use it as a diagnostic tool. Today's CIEDs feature significant memory capacity and usually are programmed to store electrograms of significant arrhythmias and any treatments delivered. Through device interrogation, the device's record of arrhythmias may help to determine the cause(s) and time of death [2]. Fatal tachyarrhythmia at the time of death could be diagnosed, or excluded. Most CIEDs also keep a running record of lead function (and dysfunction), which could implicate certain modes of death as well. In addition, the identity of unknown decedents can often be established.

Routine postmortem device interrogation would be easy to implement in most centers, and has been shown to be acceptable to the vast majority of patients [3]. Further, returning explanted devices to the manufacturer could facilitate future improvement in device function, or recycled devices could serve a second patient as a part of charitable efforts, perhaps in underserved countries [4].

References

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✉ Daniel P. Morin
dmorin@ochsner.org

¹ Division of Electrophysiology, Department of Cardiology, Ochsner Medical Center, 1514 Jefferson Highway, New Orleans, LA 70118, USA

² Ochsner Clinical School, University of Queensland School of Medicine, New Orleans, LA, USA