

# CORRESPONDENCE

## Low-Amplitude Electrocardiogram in a Patient with Atrial Fibrillation, Direct-Current Electrical Cardioversion, and Takotsubo Cardiomyopathy

To the Editor:

I read with pleasure the report by Siegfried and colleagues<sup>1</sup> about a woman with atrial fibrillation who had an episode of takotsubo cardiomyopathy (TC) immediately after undergoing direct-current electrical cardioversion of her atrial fibrillation. In their discussion, the authors provide a convincing and comprehensive analysis of the incident.

I was impressed with the low voltage in the admission electrocardiogram (ECG) and in the one after cardioversion. Transient low-voltage ECG has been described recently in association with TC<sup>2</sup>; accordingly, I would greatly appreciate information on the patient's ECGs before hospital admission and at follow-up. If these ECGs did not reveal low voltage, then TC was present before the hospital admission as a result of atrial fibrillation, even though the authors did not observe the consequences of TC in the echocardiogram and the release of cardiac troponin I before cardioversion.

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### References

1. Siegfried JS, Bhusri S, Guttenplan N, Coplan NL. Takotsubo cardiomyopathy as a sequela of elective direct-current cardioversion for atrial fibrillation. *Tex Heart Inst J* 2014;41(2):184-7.
2. Madias JE. Transient attenuation of the amplitude of the QRS complexes in the diagnosis of takotsubo syndrome. *Eur Heart J Acute Cardiovasc Care* 2014;3(1):28-36.

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*This letter was referred to Dr. Jonathan Siegfried, who replies in this manner:*

I thank Dr. Madias for his insightful response to our report.<sup>1</sup> In regard to the patient's electrocardiographic (ECG) voltage, review of the available data reveals low voltage in the limb and precordial leads 2 years before her presentation (Fig. 1), which was the most recent prior ECG. An ECG obtained at the time of follow-up, 2 weeks after the patient's discharge from the hospital,

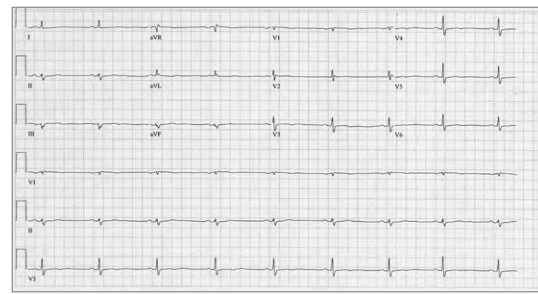


Fig. 1 Electrocardiogram shows low voltage in the limb and precordial leads 2 years before the patient's presentation.

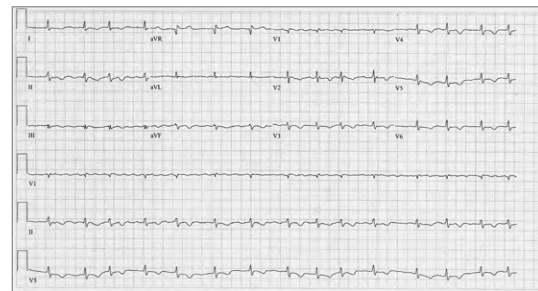


Fig. 2 Electrocardiographic findings 2 weeks after the patient's discharge from the hospital are similar to those shown in Figure 1.

showed similar findings (Fig. 2). Although there appears to be a general association between low voltage and takotsubo cardiomyopathy,<sup>2</sup> in this case the low voltage appears to have been the patient's baseline status, most likely due to body habitus.

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### References

1. Siegfried JS, Bhusri S, Guttenplan N, Coplan NL. Takotsubo cardiomyopathy as a sequela of elective direct-current cardioversion for atrial fibrillation. *Tex Heart Inst J* 2014;41(2):184-7.
2. Madias JE. Transient attenuation of the amplitude of the QRS complexes in the diagnosis of takotsubo syndrome. *Eur Heart J Acute Cardiovasc Care* 2014;3(1):28-36.

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