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Cardiology

Twiddler's syndrome: The slow twist of a pruritic pacemaker

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1 | CASE REPORT

A 77-year-old woman with history of cardiac arrest due to ventricular tachycardia, now 6 months status post implantable cardioverter defibrillator (ICD) placement, presented to the emergency department (ED) for 9 episodes of defibrillator firing at rest with ongoing shocks every 5–15 minutes. She denied chest pain not associated with the shocks, palpitations, or other symptoms before the ICD shocks. The patient noted recent generalized body itching including at the ICD site since pacemaker placement.

2 | DISCUSSION

There are 2 types of cardiac conduction devices, pacemakers to pace the heart, usually for symptomatic bradycardia, and ICDs to defibrillate patients to prevent cardiac arrest secondary to dysrhythmias. In the case of ICDs, the attached leads have 2 shock coils. One defibrillation coil is usually located in the region of the brachiocephalic vein–superior vena cava junction.The second is located in the right ventricle (RV). Pacemakers are more variable in the number of leads and location depending on the cause of the bradycardia. It may be helpful for the clinician to review prior chest imaging when reviewing current radiographs of patients with pacemakers or ICDs, especially if there is a concern for migration of their components.[1]

In this patient, chest radiography after ICD placement showed parallel leads with appropriate placement, 1 shock coil located in the right atrium and 1 in the RV (Figure 1). However, an outpatient radiograph 4 months later demonstrated twisting by the pulse generator with the leads still appropriately placed (Figure 2). On the day of ED presentation, chest radiography revealed the RV lead was dislodged and migrated back to the RA. Both proximal defibrillator leads were twisted near the pulse generator (Figure 3).

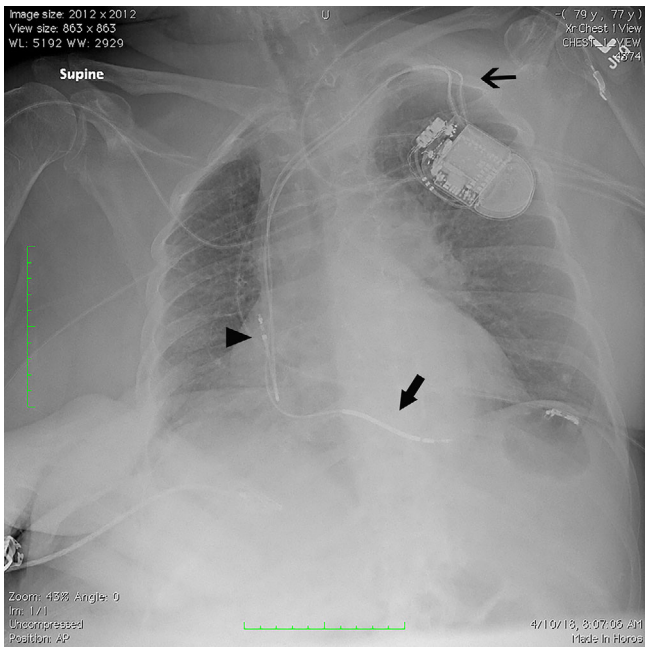

FIGURE 1 Immediately after ICD placement: Appropriately placed defibrillator leads: Black Narrow Arrow: Parallel ICD leads. Black Arrowhead: Right atrial appendage lead. Black Arrow: Right ventricular lead extending near the cardiac apex. ICD, implantable cardioverter defibrillator

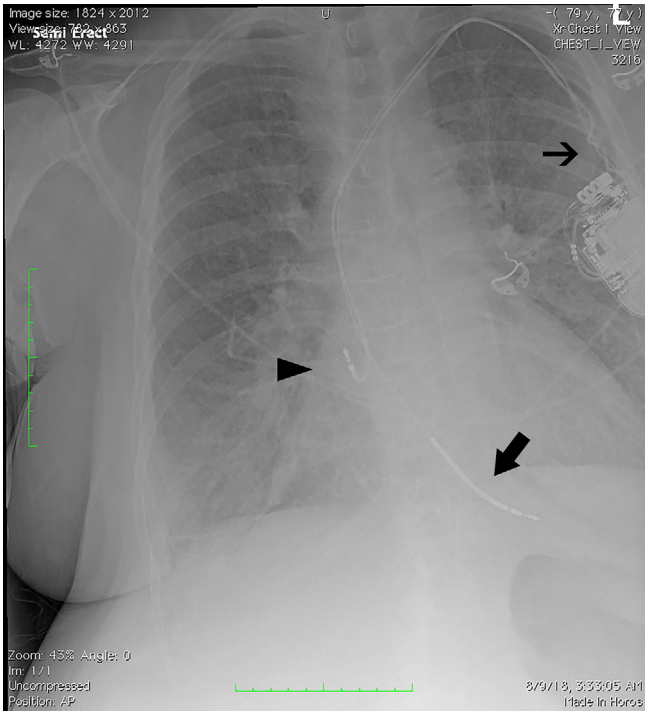

FIGURE 2 Four months after placement: Appropriately placed defibrillator leads with proximal lead twist. Black Narrow Arrow: Note some proximal twisting of ICD leads, but the RV lead is still appropriately placed. Black Arrowhead: Right atrial appendage lead Black Arrow: Right ventricular lead extending near the cardiac apex. ICD, implantable cardioverter defibrillator; RV, right ventricle

The painless dislodgement of pacemaker leads from patient manipulation, itching in this case, is known as Twiddler's syndrome. Twiddler's syndrome was first described by Bayliss et al.[2] It usually occurs within the first year of implantation and is a potentially fatal complication. Patients may present with symptoms such as syncope, vertiginous disorders, fatigue, chest pain, rhythmic arm movements due to brachial plexus stimulation, or intermittent firing, as with this patient.[3] The patient underwent successful lead revision with uneventful postoperative recovery. In this case, this patient demonstrated evidence of Twiddler's syndrome on an interim chest radiograph and may have benefited from counseling before her ED presentation.

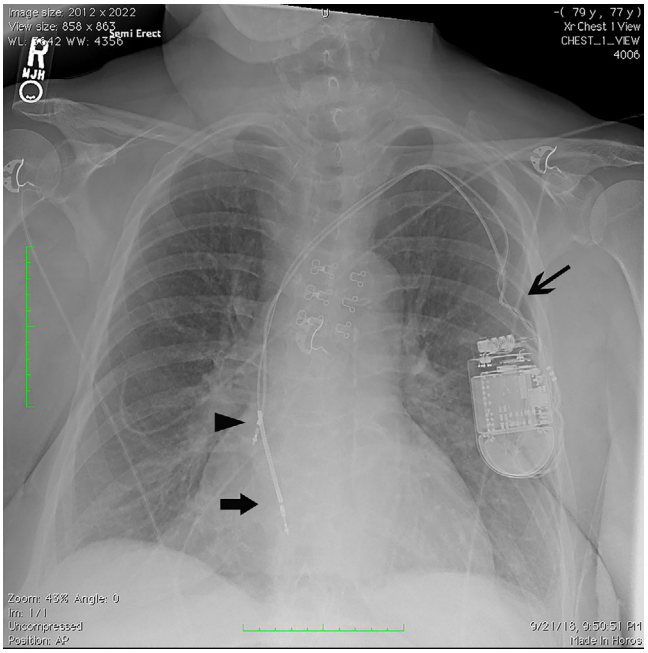

FIGURE 3 Six months after placement: Compared to prior radiographs, the defibrillator electrodes have gradually migrated with right ventricular lead dislodgement. Black Narrow Arrow: Twisting of the proximal defibrillator leads near the pulse generator. Black Arrowhead: The right atrial appendage lead now appears to be located more superiorly near the junction of the superior vena cava and right atrium. Black Arrow: The right ventricular lead projects over the right atrium

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