

Defibrillator Twiddler's Syndrome: A Case Report

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ABSTRACT

The present case documents a problem of internal cardioverter defibrillator lead disruption resulting from patient-induced rotation of the generator in its pocket, similar to the previously reported pacemaker twiddler's syndrome.

Keywords: *Defibrillator Twiddler's Syndrome, Internal Cardioverter Defibrillator*

Introduction

Long-term complications of internal cardioverter defibrillators have generally involved inappropriate shocks or hardware malfunctions. The present case documents a problem of internal cardioverter defibrillator lead disruption resulting from patient-induced rotation of the generator in its pocket, similar to the previously reported pacemaker twiddler's syndrome. However, unlike the usual early symptoms of pacemaker non function, the first symptomatic manifestation of the defibrillator twiddler's syndrome may be an inappropriate internal cardioverter defibrillator discharge or most importantly, unrescued sudden death.

Patient and Observation

A 67-year-old, obese, diabetic patient was referred to our intensive care unit under conditions of cardiopulmonary resuscitation due to ventricular tachycardia, resulting from a dilated cardiomyopathy. The electrophysical examination revealed easily inducible, sustained ventricular tachycardia that was not suppressible by different antiarrhythmic medications, thus leading to the implantation of an automatic ICD in the left subpectoral region. The postoperative recovery was unremarkable.

On follow-up at 4 months an ECG revealed loss of capture and sensing (Fig. 1).

Comparison with the previous chest radiograph (Fig. 2), Radiological evaluation revealed the right

atrium (RA) lead lying at right subclavian and SVC junction and Right ventricle lead in the RA, with additional loops of the leads near the implant (Fig. 3).

The patient denied having manipulated the implant. The leads were repositioned and box sutured in place.

The post-reimplantation period was uneventful during 20 months follow-up.

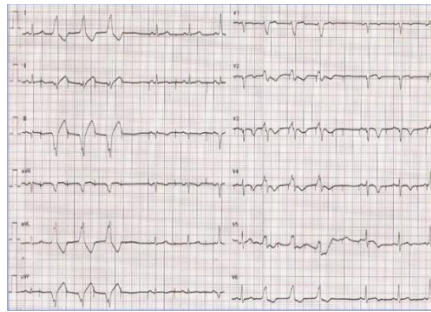


Figure 1: An ECG with Loss of Sensing and Capture

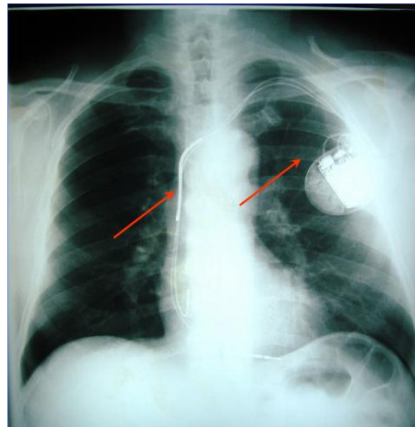


Figure 2: Post-implant chest X-ray reveals leads well positioned

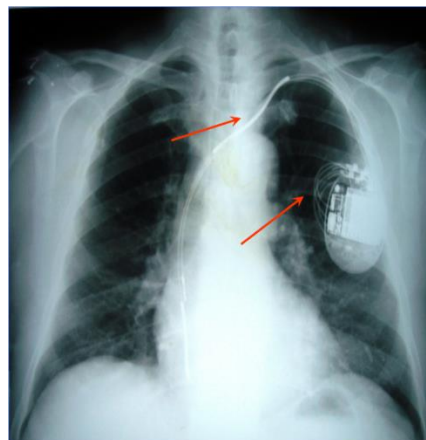


Figure 3: Chest X-ray at 4 months follow up shows RA lead at right subclavian and superior vena cava junction, RV lead in RA. Note the additional loops of the leads near the implant

Discussion

The implantations of permanent pacemakers as well as automatic ICD are well-established procedures with few complications. Whereas the more common causes of pacing failure are the dislocation of the cathetertip from ventricular trabeculations, perforation of the myocardium and catheter fracture, the most common long-term complications after ICD-implantation are hardware malfunctions eventually resulting in inappropriate shocks (Bayliss *et al.*, 1968; Grimm *et al.*, 1993). Deliberate or unconscious manipulation of the pulse generator in too large a pocket and winding the electrode around the device is an extremely rare cause of catheter displacement and has been described as the ‘pacemaker Twiddler’s syndrome’ (Bayliss *et al.*, 1968). The defibrillator Twiddlers syndrome is a more modern variant of this condition in which the implanted device is an ICD rather than a pacemaker, previously only in one instance described in a subpectoral location (Crossley *et al.*, 1996).

A widely accepted explanation for the pacemaker Twiddler’s syndrome is that new types of pacemakers are smaller and therefore easier to twist in their pocket. For pacemakers this risk is greater in obese, elderly patients who have abundant subcutaneous fat or loose connective tissue (Grimm *et al.*, 1993; Crossley *et al.*, 1996). These characteristics were seen in our patient.

Chest radiographs may allow the clinician to recognize this syndrome before a major, possibly fatal event.

Conclusion

We stress the importance of carefully reviewing the chest radiograph with special regard to the electrode orientation in all patients with pacemakers or ICD. This is essential in order to detect minor changes in lead configurations which may indicate a malfunction especially as a faulty device does not cause immediate symptoms.

References

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