IMPLANTABLE DEFIBRILLATION THERAPY

UNIQUE IMAGE REVIEW

A Radiographic Clue to Diagnose Twiddler's Syndrome

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ABSTRACT. *Twiddling of implantable devices is frequently denied by patients. We present a radiographic marker which may provide an important clue to this problem.*

KEYWORDS. *Device malfunction, pacemaker, Twiddler's syndrome.*

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Introduction

A 68-year-old female underwent implantation of a primary prevention single chamber defibrillator 7 months prior (**Figure 1a**). A postoperative hematoma developed that was conservatively managed. The patient was seen in our clinic unexpectedly because of sudden onset of abdominal contractions. A chest X-ray revealed lead displacement to the superior vena cava–right atrial junction. Interestingly, rotation of the device header was noted on the chest X-ray (**Figure 1b**). Note the direction is opposite in **Figure 1b** compared with **Figure 1a**. An electrocardiogram documented failure to sense and capture her pacemaker lead. Right-sided abdominal contractions were noted on examination that resolved upon turning off her device – the mechanism of this was presumed to be secondary to right phrenic nerve stimulation by the pacing lead. On careful history taking, the patient and her family repeatedly denied manipulation of her device pocket.

Twiddler's syndrome is an infrequent cause of implantable cardiac device malfunction. Classically, this

condition is due to manipulation of the cardiac device. Patients may rotate as well as flip the device. This situation typically arises in individuals with a capacious device pocket, which is frequently due to tissue laxity characteristically present in elderly or obese patients.¹ We suspect the pocket hematoma our patient experienced post implantation resulted in the expansion of her device pectoral pocket and predisposed her to this condition.

As in our case, most patients deny any manipulation of their device.² Our case highlights that attention to the orientation of the device on chest radiography may provide an important clue to this condition. Suturing the device in place can help to prevent this condition.

References

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Figure 1: (a,b) Arrows indicate the direction of device header at the time of implant (a) and at the time of lead dislodgement (b).