

Twiddler's Syndrome Detected by Home Monitoring Device

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SCHOLTEN, M.F., ET AL.: Twiddler's Syndrome Detected by Home Monitoring Device. Lead fracture due to twiddler's syndrome, was detected in a 68-year-old patient 1 month after implantation of an ICD by means of the incorporated home monitoring system. The patient was admitted and the lead replaced. This case illustrates the clinical benefit of the home monitoring system. (*PACE* 2004; 27:1151–1152)

home monitoring, ICD, Twiddler's syndrome

Introduction

Twiddler's syndrome as a pacemaker complication was first described by Bayliss et al. in 1968.¹ In these cases the pacemaker is turned over and over, such that the lead is wound around itself. This syndrome has also been described in implantable defibrillator cardioverter (ICD) patients.² This report describes a patient in whom the diagnosis of twiddler's syndrome was made after a report from the home monitoring system of the ICD implanted in this patient.

Case Report

A 68-year-old man had an ICD implanted in August 2003. In 2001 the patient experienced an inferior wall myocardial infarction. In July 2003 he developed progressive angina and a coronary angiogram was performed. His ejection fraction was 45% and triple vessel disease was found. He underwent coronary artery bypass grafting (CABG) (LIMA graft-LAD, saphenous vein graft-MO-RDP) without complications. One day after the CABG he was resuscitated due to very rapid monomorphic VT with a frequency of 240 beats/min. In the days thereafter, multiple episodes of nonsustained VT were recorded. Programmed stimulation was performed 18 days after the CABG and a sustained monomorphic VT could be repeatedly induced. It was decided to implant an ICD. The patient gave informed consent for participation in the international Home Monitoring Technology for ICD therapy study. The medical ethical committee of the hospital approved the protocol of this study. In this study the Belos VR-T ICD (Biotronik GmbH, Berlin, Germany) is used. Due to its integrated

long-distance telemetry, this ICD is capable of periodically transmitting therapy and status data to the patient device RUC 1000-a (Biotronik), usually placed on the bedside cabinet of the patient, and then to a dedicated service center. The service center decodes the data and faxes it to the physician at specified time intervals. The purpose of the study is to find the diagnostic power of telemetrically transmitted data.

After local anesthesia, the cephalic vein was located and an electrode (Medtronic Sprint 6945, Medtronic Inc, Minneapolis, MN, USA) was introduced and positioned in the right ventricular apex. This lead was connected to a Belos VR-T ICD (Biotronik) which was placed in a left subcutaneous pocket. After successful testing of the implanted system, the patient was discharged the following day. Forty-three days after implantation, a home monitoring report was received (Fig. 1). This report showed a steep increase in impedance after an initial period of low impedance. A lead rupture was suspected. The patient was called

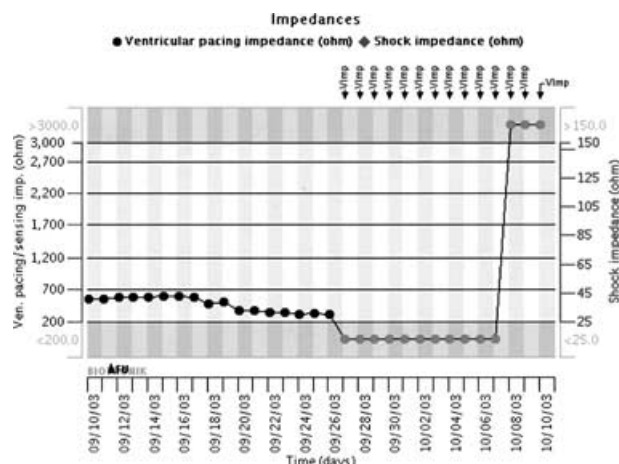


Figure 1. Home monitoring report showing a decline in impedance (09/25/03) followed a few days later by a steep rise in impedance.

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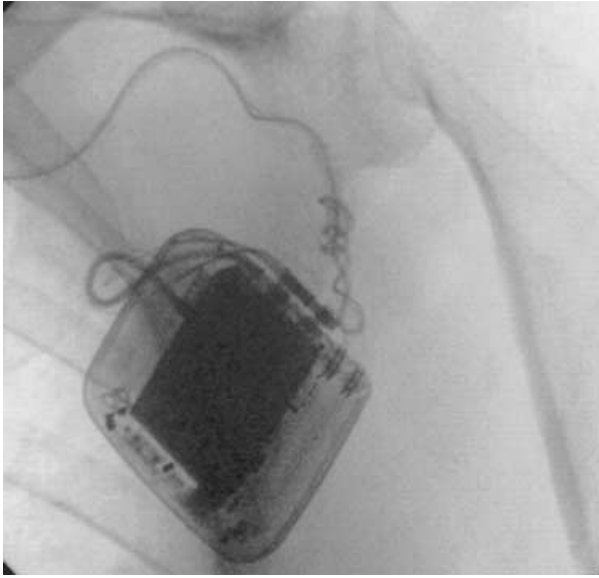


Figure 2. Chest X ray of the patient shows a tightly wound lead.

for an urgent check-up. A chest X ray was done (Fig. 2) and the diagnosis of twiddler's syndrome was made. A second procedure was scheduled. After opening the wound, the tightly wound lead was clearly visible (Fig. 3). Further dissection disclosed a complete fracture of the lead. The lead had to be cut more distally to advance a stylet. With gentle traction the lead could be extracted. A new lead (Medtronic Sprint 6945, Medtronic Inc.) was introduced through the left subclavian vein

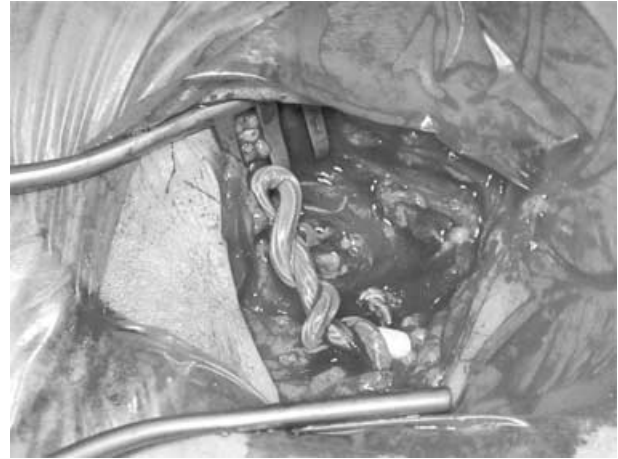


Figure 3. After opening the pocket the twisted lead is clearly seen.

and connected to the ICD, which was secured in the pocket with a suture.

Discussion

Twiddler's syndrome early after implantation has been described before.³ This case clearly demonstrates the potential of the home monitoring system. However since the report was only seen a few days after the acute increase in impedance, one feels the need for an automatic warning feature. Technical features of the home monitoring system have been previously described⁴ and are promising, at least in areas with sufficient mobile net coverage.

References

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