SYNCOPE

ZOLL Patient Management Network Case Study: Unexplained Syncope

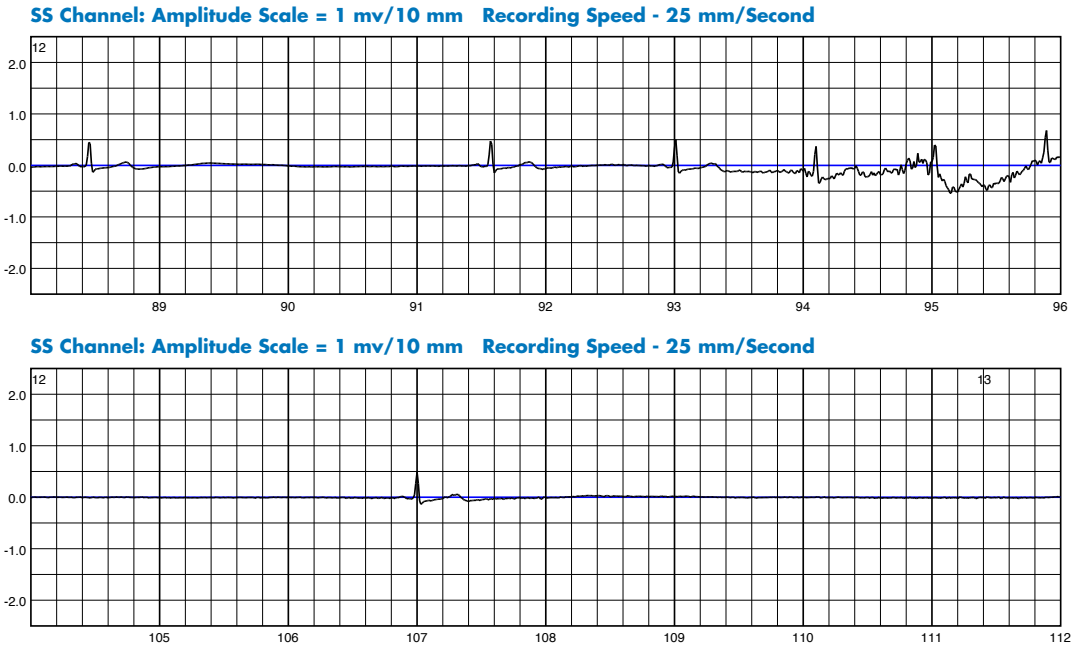


Figure 1. Portion of the patient's ECG automatically downloaded from the device and remotely viewed on the ZOLL Patient Management Network.

Synopsis

The LifeVest® wearable caridoverter defibrillator (WCD) was prescribed for a patient with a dilated cardiomyopathy following STEMI with PCI with a Left Ventricular Ejection Fraction (LVEF) = 30% for protection from Sudden Cardiac Death (SCD). Data collected from the LifeVest WCD and captured in the ZOLL® Patient Management Network revealed recurring bradycardia events that required pacemaker implantation.

History and Plan

- A conscious 64-year-old female presented to the ER after suffering a syncope event that resulted in minor injuries. Lab work and CT scan of head were normal.
- History:
  - 2.5 months post large anterior STEMI.
  - LAD had 100% de novo stenosis requiring DES placement. Following intervention, there was 0% stenosis with TIMI grade 3 flow.
  - Discharge LVEF = 30%.
- Pharmacy:
  - Patient is euvolemic; continue carvedilol, sprironolactone, lisinopril, add sublingual nitroglycerin prn
- Recent hospitalization noted continued low LVEF = 30% with dilated cardiomyopathy.
  - Suspected Ventricular Tachycardia (VT) cause for syncope.
- Electrophysiology (EP) consult resulted in patient discharge with the LifeVest WCD for protection from SCD.

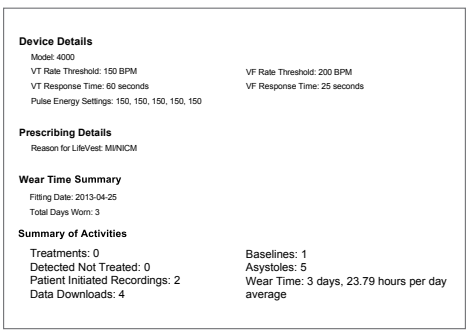
ZOLL® LifeVest®

ZOLL Patient Management Network Configuration

In addition to issuing a red alert for ventricular arrhythmias, the Nurse Practitioner (NP) in the clinic configured the ZOLL Patient Management Network to issue an orange (mid-level) alert any time that the patient experienced an asystole event (Figure 2). An additional orange alert was configured to alert her when the patient manually captured an ECG recording.

The LifeVest detection algorithm is programmed to declare asystole when the heart rate falls below 10 beats per minute (bpm) for 16 seconds and automatically records the event, with 120 seconds of onset. Patients can perform manual recordings by pressing the response buttons for three seconds, which records the previous 30 seconds plus the next 15 seconds.

Figure 2. Screenshot of the ZOLL Patient Management Network user's customized Alert settings.



Device Details

Model: 4000
VT Rate Threshold: 150 BPM
VT Response Time: 60 seconds
Pulse Energy Settings: 150, 150, 150, 150, 150
VF Rate Threshold: 200 BPM
VF Response Time: 25 seconds

Prescribing Details

Reason for LifeVest: MI/NICM

Wear Time Summary

Fitting Date: 2013-04-25
Total Days Worn: 3

Summary of Activities

Treatments: 0
Detected Not Treated: 0
Patient Initiated Recordings: 2
Data Downloads: 4
Baselines: 1
Asystoles: 5
Wear Time: 3 days, 23.79 hours per day average

Results

One (1) day post-discharge, the LifeVest WCD captured 2 patient initiated recordings and 5 asystole events with no tachyarrhythmia detections or shocks. The asystole events occurred while the patient was sleeping. ECG review by the EP revealed bradycardia at rate below 20 bpm with increasing R-R intervals. In-office follow-up by the EP resulted in permanent pacemaker implantation.

Figure 3. Follow-Up Report from the ZOLL Patient Management Network. This report shows the patient had 5 total recorded asystole events, 2 of which were initiated by the patient and 3 recorded automatically by the LifeVest.

Identification of Bradycardia Through Remote Patient Monitoring

The clinic regularly reviews notifications and patient recordings on the ZOLL Patient Management Network. Upon review of the ECG recordings, it was determined that the patient regularly experienced several bradycardia events, identified by the LifeVest WCD as asystole events, that required additional in-office work up. In this case, information captured by the device directly impacted the patient's care path.

For additional information on the ZOLL Patient Management Network, including instructions on how to enroll, contact your ZOLL LifeVest representative or visit www.zoll.com.

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