

ZOLL Patient Management Network Case Study: Atrial Fibrillation

FB Channel: Amplitude Scale = 1 mv/10 mm Recording Speed - 25 mm/Second

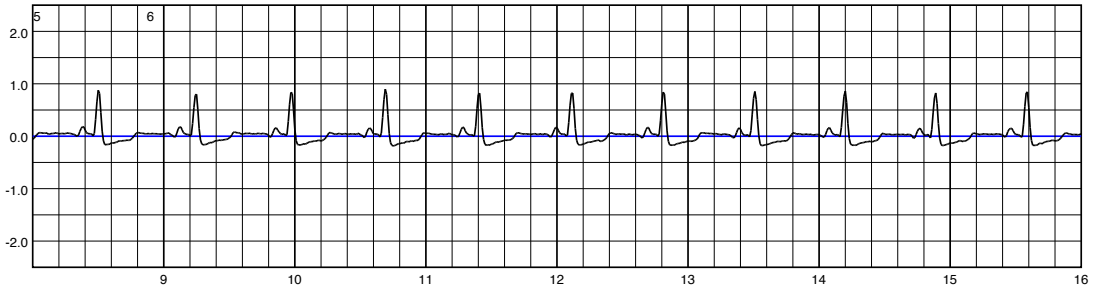


Figure 1. Portion of an ECG recorded from the patient's LifeVest at baseline.

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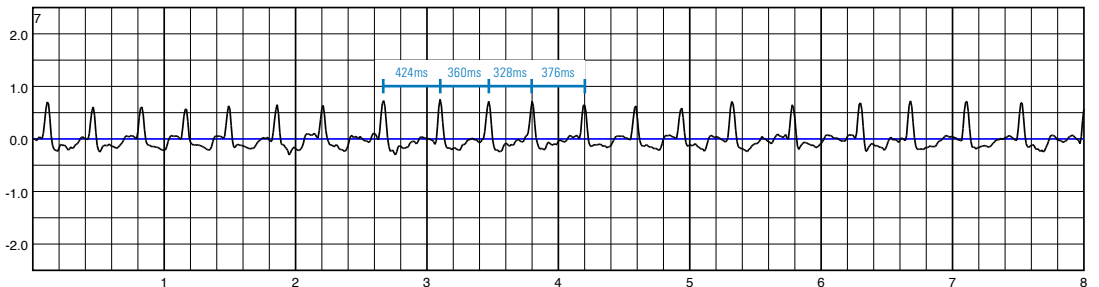


Figure 2. Portion of the patient's ECG automatically downloaded from the device and remotely viewed on the ZOLL Patient Management Network.

Synopsis

The LifeVest® wearable cardioverter defibrillator (WCD) was prescribed for a newly diagnosed heart failure patient with a Left Ventricular Ejection Fraction (LVEF) = 20% for protection from Sudden Cardiac Death (SCD). Data collected from the LifeVest WCD and captured in the ZOLL Patient Management Network Patient Data Management System altered the course of treatment for the patient.

History and Plan

- A 68-year-old man with no known past medical history was admitted to the ER due to a one week history of shortness of breath and chest discomfort.
- Chest x-ray showed cardiomegaly; labs indicated mildly elevated BNP.
- Enzymes were negative for acute myocardial infarction.
- 2D echogram:
 - LVEF = 20%
 - Global hypokinesis of left ventricle
 - Mild mitral valve regurgitation
- Pharmacy:
 - Patient was discharged with Lasix 20 mg QD, carvedilol 1.5625 mg BID, low salt diet, and a plan to follow up with a cardiologist in 3–5 days.
- Upon follow-up, patient complained of continued non-exertional chest “tightening” lasting 30–45 minutes.
- Cardiologist prescribed the LifeVest WCD for protection from SCD.

ZOLL Patient Management Network Configuration

The Nurse Practitioner (NP) configured the ZOLL® Patient Management Network to issue an orange (mid-level) alert, for at least two patient-initiated recordings per day, detected but not treated events, and asystole events (Figure 3). The LifeVest allows patients to manually record ECG strips by pressing the response buttons for three seconds.



Figure 3. Screenshot of the ZOLL Patient Management Network user's customized Alert settings.

Results

Seven (7) days after being fit with the LifeVest WCD, the patient manually captured several ECG recordings by pressing the response buttons on the LifeVest WCD. Review of the recordings showed irregular R-to-R intervals (Figure 2) and were determined to be atrial fibrillation. The patient was contacted over the phone and a medication regimen was initiated. The patient was referred for a consult with an Electrophysiologist.

Identification of Atrial Fibrillation Through Remote Patient Monitoring

A newly diagnosed heart failure patient with an LVEF = 20% was prescribed the LifeVest WCD for primary prevention of SCD. The NP regularly reviews the ZOLL Patient Management Network Dashboard, and noted that LifeVest captured two automatic recordings and a patient-initiated recording. When abnormalities are noted in the patient's alert profile, information is shared with a physician for additional review. In this case, the patient manually recorded an ECG that, upon review by the physician, showed irregular R-R intervals indicating atrial fibrillation. In addition to manual ECG recording, LifeVest will also automatically detect supraventricular tachycardias when there is conduction to the ventricles at a rate above the programmed detection rate. This case provides an example of a patient being protected from SCD with remote intervention for a concomitant cardiac condition.

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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