

The LifeSigns® Systems RhythmCheck® Recorder – Case Study

Home ECG Assessment Using The RhythmCheck

John was a 62-year-old autoworker, recovering from post coronary artery bypass grafting (CABG) one week ago. John had undergone two angioplasties previous to heart surgery, however the newly opened conduits had failed. He was very anxious about his recovery, and felt he needed to return to work soon. John decided to stay at his sister's house until he felt comfortable returning to his own home, where he lived alone in the country.

When the home care nurse first visited John, his vital signs were stable, physical assessment was within normal parameters for this period of CABG recovery, and his Lead II ECG on the nurse's Rhythm Check ECG monitor, exhibited normal sinus rhythm with an occasional unifocal pre-ventricular contraction (PVC). John's greatest complaint was that he wanted a cigarette, and was having nightmares.

On the morning of the third visit, when the nurse arrived, John was sitting in an easy chair drinking coffee. He had no complaints, however when the nurse used the Rhythm Check ECG monitor to assess his heart rhythm, the ECG exhibited bigeminy, a PVC every other heartbeat. The nurse said nothing to John about the ECG rhythm, but continued to watch the monitor while she completed the physical assessment. John's pulse was 108 bpm and irregular, blood pressure 124/70, respirations were 16, and temperature was 98.6 F. There was no change from the baseline assessment other than John continued to exhibit a bigeminal rhythm.

Without ECG visualization, the rapid irregular pulse would have warranted additional medical evaluation in a physician's office or emergency department. The nurse however was able to determine, what she believed to be, the cause of the irregular and rapid pulse. After talking with John's physician, it was decided that the dysrhythmia was probably the result of the nine cups of regular coffee consumed within the last three hours, that morning. Even though the nurse was fairly certain that the coffee was the cause of the rapid and irregular pulse rate, it was decided that the nurse would visit the following day to assess the heart rhythm and identify if it had returned to normal sinus rhythm.

John remained at home rather than go for further medical evaluation. He was given instructions regarding the effects of caffeine. John was also instructed on the signs and symptoms that prompted contacting the nurse, and those symptoms that would dictate contacting emergency services. When the nurse telephoned John later that same day, he stated that he felt fine and had avoided any further caffeine intake.

The following day's nurse visit showed that the ECG had returned to normal sinus rhythm. John had no further problems during his recovery.

If the nurse had not been able to visualize the ECG in which the rapid and irregular pulse was a new change from baseline, additional medical evaluation would have been advised. Post bypass surgery arrhythmias are a common complication and require assessment to avoid progression toward

greater problems. If John had been sent to the emergency department, or required emergency services to come to the house, it is likely that a Lidocaine bolus and drip would have been started, not only adding cost, but the risk of iatrogenic complications.

In this case John was fortunate that the cause of the dysrhythmia was the result of too much caffeine and not myocardial irritability related to his surgery. While dysrhythmias after CABG surgery are decreasing as a result of better surgical technique and medications, reports still cite that as many as 20-40% of patients post surgery present with dysrhythmias. (Gomes, 1999)

Patients recovering from cardiac surgery require rhythm assessment as a standard component of their cardiovascular assessment. Today, however patients return home as early as two days after bypass surgery, and yet the threat of dysrhythmia complications can occur up to seven days post surgery. It is important that home care professionals have the tools, such as the Rhythm Check ECG monitor from Instromedix, to help complete their cardiovascular assessment.

Gomes JA, Ip J, Santoni-Rugiu F, Mehta D, Ergin A, Lansman S, Pe E, Takle-Newhouse T, Chao S. Oral d,l sotalol reduces the incidence of postoperative atrial fibrillation in coronary artery bypass surgery patients: a randomized, double-blind, placebo-controlled study. *Journal of the American College of Cardiology*. 2000; 34(2), 334-339.

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