

Audible Cardiac Monitoring Facilitates Recognition of Ventricular Fibrillation During Simultaneous Resuscitation of Another Critically Ill Patient: A Case Report

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Abstract

Introduction: Continuous physiologic monitoring is widely employed to identify clinical deterioration in emergency department patients. However, the effectiveness of monitoring systems depends on appropriate utilization of their available functions and the vigilance of healthcare personnel.

Case Presentation: A 54-year-old man undergoing evaluation for chest pain experienced a syncopal episode and was transferred to an acute-care area for cardiac monitoring. Noticing that the monitor display was difficult to visualize from the nursing station, the supervising emergency physician instructed staff to maximize the volume of the monitor's audible heartbeat signal. Shortly thereafter, the medical team became occupied with the simultaneous resuscitation of another critically ill patient. During this intervention, a vigilant charge nurse noticed the sudden absence of the previously audible heartbeat signal. Immediate assessment revealed the patient to be unconscious and in ventricular fibrillation. Cardiopulmonary resuscitation was initiated and a single unsynchronized defibrillation shock restored sinus rhythm. The patient recovered fully following urgent coronary intervention without neurologic or cardiac sequelae.

Conclusion: This case demonstrates how optimal use of routine monitoring technology, combined with clinical vigilance, can facilitate rapid recognition of life-threatening arrhythmias and contribute to successful resuscitation.

Keywords: *Emergency department; Ventricular fibrillation; Cardiac monitoring; Clinical alarms; Defibrillation; Patient safety*

1. Key Clinical Message

Audible cardiac monitoring remains an important patient-safety tool in busy emergency departments. Proactive activation of audible monitor signals may facilitate immediate recognition of sudden clinical deterioration, particularly when healthcare personnel are simultaneously engaged in the management of other critically ill patients.

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2. Introduction

Quality surveillance of multiple patients requiring urgent medical attention demands both experienced personnel and effective monitoring systems. The challenge becomes greater in crowded emergency departments where clinicians are frequently required to divide their attention among multiple unstable patients. Physiologic monitoring devices are therefore routinely employed to facilitate early recognition of patient deterioration and allow timely intervention [1-5].

This report describes a patient whose ventricular fibrillation was recognized because the supervising emergency physician insisted that an audible cardiac monitoring signal be activated and clearly heard throughout the treatment area. The subsequent observation of its sudden silence by a vigilant nurse led directly to rapid defibrillation and complete recovery.

3. Case Presentation

A 54-year-old man with a history of heavy smoking and mild alcohol use was referred to the emergency department after experiencing a brief episode of chest pain. An electrocardiogram obtained by his primary care physician demonstrated nonspecific ST-T abnormalities in the anterolateral leads.

While awaiting medical assessment, the patient suddenly collapsed and was briefly unresponsive. He rapidly regained consciousness and denied ongoing symptoms. Vital signs and blood glucose measurements were normal. He was transferred to the acute-care section of the emergency department for closer surveillance and connected to a cardiac monitor-defibrillator. The supervising senior physician, positioned at the nursing station, noted that the monitor display was difficult to appreciate from a distance. He therefore instructed the staff to increase the volume of the monitor's audible heartbeat signal to its maximum setting to ensure continuous awareness of the patient's cardiac activity.

Shortly thereafter, an elderly woman who had collapsed immediately following a dialysis session arrived in critical condition. The physician and nursing staff immediately focused on her stabilization in the resuscitation suite.

While caring for this patient, the charge nurse suddenly recognized that the previously audible heartbeat signal from the nearby monitored patient had ceased. Concerned by this abrupt silence, the team immediately proceeded to reassess him.

The patient was found unconscious. Cardiac monitoring demonstrated ventricular fibrillation. Cardiopulmonary resuscitation was initiated immediately and a single unsynchronized defibrillation shock of 360 J restored normal sinus rhythm. The patient regained consciousness promptly and was subsequently transferred for urgent coronary angiography and definitive cardiac intervention.

He ultimately made a complete recovery without neurological or cardiac sequelae. The dialysis patient also stabilized and was later discharged in satisfactory condition.

4. Discussion

Early defibrillation remains the most important determinant of survival in ventricular fibrillation. Delays of only a few minutes may significantly worsen both survival and neurological outcomes [1-4].

This case illustrates three important patient-safety principles. First, monitoring technology can only be effective when its available functions are utilized appropriately. The audible heartbeat signal was not merely a convenience but became the critical factor that enabled immediate recognition of clinical deterioration [6,7].

Second, despite advances in monitoring technology, successful outcomes continue to depend upon vigilant healthcare personnel. The charge nurse's awareness of the sudden silence of the monitor demonstrated exceptional situational awareness during the simultaneous management of another critically ill patient [8,9].

Third, the case emphasizes the importance of maintaining monitoring practices even in busy and resource-constrained emergency departments. The combination of proactive physician judgment, appropriate use of technology, and attentive nursing observation produced a favorable outcome that might otherwise have been missed until a much later stage [6-9].

5. Conclusion

This case serves as a reminder that simple monitoring functions can have life-saving consequences when utilized thoughtfully. The proactive decision to activate an audible cardiac monitoring signal, together with the vigilance of an experienced nurse, enabled immediate recognition of ventricular fibrillation and successful resuscitation. Optimal use of available monitoring technology remains an essential component of patient safety in the emergency department.

6. Author Contributions

Sody Naimer conceived the report, collected the clinical information, drafted the manuscript, revised the manuscript critically for important intellectual content, and approved the final version.

7. Conflict of Interest

The author declares no conflict of interest.

8. Funding

No funding was received for this work.

9. Ethics Statement

Institutional approval was not required for publication of this anonymized case report according to local policy.

10. Consent

The report contains no patient identifiers. All potentially identifying information has been removed.

11. Data Availability Statement

Data sharing is not applicable to this article because no datasets were generated or analyzed.

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