



“Firefighter Down!”:

Sudden Cardiac Events and Risk Mitigation for Emergency First Responders

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Introduction

While responding to a call, a 62-year-old male volunteer firefighter (FF) collapsed and went into cardiac arrest. He was revived by first responders in the field and transferred to advanced hospital care. After undergoing coronary artery bypass grafts (CABG), the patient was able to return to duty.

Purpose

The purpose of this case study is to bring attention to the issue of sudden cardiac events (SCEs), and to seek solutions for this problem.

SCEs are responsible for nearly half of FF deaths and represent a significant risk for morbidity in the occupation, as demonstrated in this case. Many FFs exhibit risk factors with concomitant elevated morbidity and mortality rates. Stations must implement evidence-based medicine in regular practice to prevent SCEs¹⁻⁷.

Case Description

A 62-year-old male volunteer FF was completing a medical call when he complained of rapidly elevating pressure in his head. He collapsed on the scene. His partner immediately performed cardiopulmonary resuscitation (CPR), defibrillated the patient twice, and activated emergency medical services. At the call, “Firefighter down!”, paramedics returned to the scene to assist with the resuscitation. The patient was determined to be in full cardiac arrest and without vitals for approximately 6 minutes.

The patient was stabilized and transported to a trauma center. His troponins were elevated, and ECG demonstrated anterior ST elevations. He underwent a double CABG procedure on the left anterior descending artery. The remainder of his hospital course was unremarkable.

The patient was able to return to limited duty after 3 weeks of rehabilitation. He was at full-duty status after an additional 2 months of recuperation. The FF’s successful resuscitation was directly attributed to the first responders’ rapid actions; particularly his partner’s extraordinary reaction in her first “Doctor 100” call.

Discussion

SCEs are the most common causes of FF line-of-duty deaths. For every FF death from SCEs, 17 additional FFs survive cardiovascular events. Most incidents occur while responding to calls or within 24 hours afterward; and SCEs are associated with exertion 98% of the time. Poor diet, lack of conditioning, and age are significant factors. Additionally, up to 88% of firefighters are obese, leading to increased risk of metabolic syndrome and SCEs¹⁻⁴.

Key recommendations were developed to reduce morbidity and mortality from SCEs. These include the following⁴⁻⁶:

1. Provide annual medical examinations consistent with the National Fire Protection Association (NFPA) 1582⁷ guidelines and be cleared for duty.
2. Mandate regular participation in fitness programs tailored to FFs.
3. Educate stations on preparing healthful meals.
4. Monitor FFs during and up to 24 hours post-event.

Clinical Significance

•SCEs account for significant morbidity and mortality among FFs. It is therefore essential for each station to implement preventive, evidence-based medical measures. By taking recommended precautions, SCE rates can be significantly mitigated¹⁻⁷.

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Acknowledgements

Special thanks to the Putnam County, FL Volunteer Fire Department for their assistance in this case report.