

Occupational Stress and Sudden Cardiac Death in a Middle-Aged Tailor: A Case Report

Shreyash Chaudhary¹, Niraj Pandit^{2*}, Grishma Chauhan³, Abhishek Somani⁴

^{1,2,3,4}Department of Community Medicine, SBKS MI&RC, Sumandeep Vidyapeeth, Piparia, Vadodara, India

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ABSTRACT

Background: Sudden death is a significant public health concern in recently worldwide including in India. They are rare but require thorough investigation to identify the potential contributing factors.

Case: Reporting a case of a 48-year-old male who succumbed to sudden death while working on a tailor machine. The patient had no known history of cardiac disease, addiction, or chronic illnesses. Despite the absence of hypertension or other chronic conditions, the individual had been under significant work-related stress and had been overburdened at work during those days leading to his demise.

Conclusion: This case highlights the interplay of multiple contributing factors, including pre-existing risk factors, acute stressors, low water intake, and sleep deprivation. To recognise these factors and promoting preventive measures through regular primary care or family physician can significantly reduce the risk of such unwanted events.

Key words: Sudden Cardiac Death, Coronary Artery Disease, Occupational Stress, Sleep Deprivation, Premature Mortality

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***Correspondence:** Dr. Niraj Pandit (Email: drniraj74@gmail.com)

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INTRODUCTION

Sudden death, defined as a natural, unexpected death occurring within an hour of symptom onset in an individual with no evident health issues or with a condition was not severe enough to indicate a risk of sudden death.¹ It is a significant public health concern in recently including in India. Sudden unexplained deaths are not rare globally; it is unexplained sudden death without prior disease that is uncommon. While various aetiologies contribute to this phenomenon, cardiovascular events remain the leading cause, particularly in middle-aged men. This case report presents the sudden death of a 48-year-old male tailor, highlighting potential contributing factors and emphasizing the importance of primary care management in preventing such tragedies.

CASE PRESENTATION

A 48-year-old male tailor, with no documented history of chronic illnesses, succumbed to sudden death at his residence. Two days prior to the incident, the patient experienced bilateral shoulder pain, for which analgesic were prescribed by the local family physician. A day before the patient's death, he worked until 1 am, and only 4 hours of sleep. He resumed sewing to fulfil Navratri festival orders. Despite his wife's concern, he insisted on finishing his work. Shortly after, his wife went to take a bath and upon returning, found him unconscious and unresponsive, lying on ground. His wife rushed him to the hospital, where he was declared 'brought dead.'

A case had a height 167 cm and weight 55 kg with BMI of 19.71 kg/m². He had no history of any type of addiction or any chronic illnesses. No electrocardiogram (ECG), lipid profile, blood glucose, or prior echocardiography results were available. But the patient had a family history of cardiac death, as family reported that his father died at 65 due to a heart attack. He is vegetarian on diet history. He occasionally used proton pump inhibitors tablet for gastritis. His diet consisted of irregular meals, demonstrating a dietary preference for spicy and oily foods. The patient did not engage in regular exercise or yoga for health benefit. Except work related stress, he didn't have any other stressors on history. The patient showed no significant changes in behaviour or diet in the days before the event, except that his wife reported he was drinking less water.

For reaching diagnosis based on history, the case evaluated for undiagnosed arrhythmias, myocarditis, pulmonary embolism or congenital heart conditions, but not relevant history found. Occupational stress and inadequate hydration lead to electrolyte imbalance precipitate fatal arrhythmias was suspected.

The family member shared post-mortem report. The report states that the patient had an average build with a normal BMI. No external trauma or signs of distress were observed. The forensic examination of

heart revealed that left anterior descending, right coronary artery and left circumflex coronary artery showed complete blockage of their lumen. The post-mortem report concluded with cardiorespiratory arrest due to coronary insufficiency.

DISCUSSION

This sudden death event occurred in a middle-aged male while working on his tailor machine. Any death in individuals under the age 50 are considered as premature death. The causes of premature deaths are required to search with verbal autopsy and post-mortem of the actual dead body. In this case the team of investigators tried to find out the association of the sudden premature death of a person.

The Key highlights observed in this case include proposed cardiovascular risk factors: Although the deceased had no known pre-existing cardiovascular conditions, his age, gender, family history of premature cardiac death and occupational stress due to increased workload are recognized risk factors for coronary artery disease and acute cardiac events.^{2,3} He had history of bilateral shoulder pain and visited primary care physician for same, which was actually warning sign. Primary care physician should not ignore such sign. As primary care physician, one need to evaluate their clients for cardiovascular risk factors regularly and if any unwanted symptoms reported.

Sleep deprivation: The deceased's reported less sleep duration might have further exacerbated his cardiovascular risk. Sleep deprivation can contribute to hormonal imbalances, sympathetic over-activity, and inflammation, all of which can trigger or worsen cardiac events.^{4,5}

Stress and mental health: The increased workload with target achieving pressure in festive season could have contributed to significant psychological stress. Chronic stress is linked to increased cortisol levels, which can adversely affect cardiovascular health by promoting hypertension, endothelial dysfunction, and arrhythmias.⁶

Dehydration and health: Dehydration has emerged as an important yet often under-recognized factor contributing to adverse cardiovascular outcomes and potential sudden death, particularly in individuals exposed to occupational stress. Evidence from a study among construction workers in Southern Nigeria demonstrated that unfavourable psychosocial work environments characterized by high workload, stress, and inadequate rest were significantly associated with poor hydration status, highlighting how occupational factors can predispose individuals to dehydration and physiological strain.⁷ Dehydration leads to reduced plasma volume, increased blood viscosity, and electrolyte imbalance, which can impair cardiovascular efficiency and increase the risk of arrhythmias and circulatory instability. Supporting

this, clinical insights indicate that inadequate fluid intake places additional strain on the heart by forcing it to work harder to maintain circulation, thereby increasing susceptibility to cardiovascular events, especially when combined with stress and fatigue.⁸

Role of primary care physician or family physician: This case underscores the importance of regular primary care physician visits for individuals at risk of cardiovascular events. The visits to the primary care physician or family physician are important to identify the cardiovascular risk early. The implementation and routine use of a cardiovascular risk assessment tool by family physicians could significantly benefit the community by helping to prevent such tragic events. They can help early identification of risk factors, lifestyle modifications, and appropriate medical management to their clients.

CONCLUSION

Sudden death in young adults is a devastating event for families and is often linked to undiagnosed or poorly managed cardiovascular conditions. This case underscores the complex interplay of pre-existing risk factors, acute occupational stress, inadequate hydration, and sleep deprivation in precipitating such outcomes. Early recognition of these modifiable risks and strengthening preventive care through regular primary care and family physician engagement are essential. In the Indian context, routine use of validated cardiovascular risk assessment tools such as the WHO/ISH risk prediction charts by family physicians for working-age men can facilitate early identification and timely intervention, thereby reducing the likelihood of such preventable tragedies.

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