

CASE REPORT**Anxiety and Cardiovascular Diseases: A Case Report**

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Abstract

This case report highlights the importance of watching and ruling out cardiovascular diseases in patients with anxiety disorders. In clinical settings, anxiety often might be the first or most prominent symptom of an undiagnosed medical illness, which only a detailed workup could establish its diagnostic significance. We report a case of ischaemic heart disease (IHD) in a patient presented with generalised anxiety disorder (GAD) symptoms, such as difficulty sleeping, chest pain, tingling sensation in extremities and intermittent dyspnoea. After experiencing persistent chest pain for six months, patient was only referred to the cardiologist. A computed tomography (CT) angiography revealed blockage in his left coronary artery. After undergoing an angioplasty, patient came to his follow-up visit in good health and he is now able to sleep well – after years of attempting to treat his sleeping difficulty.

Keywords: Cardiovascular, Anxiety, Ishaemic Heart Disease, Comorbidity, Risk

Introduction

Anxiety is a feeling of uneasiness, usually experienced when one is facing difficult or threatening situations [1]. It is a normal adaptive response to make us more alert and energetic in handling our problems. However, it can be dysfunctional when it gets too overwhelming or is always present. According to ICD-10, GAD is diagnosed when the patient has primary symptoms of anxiety most days for at least several weeks, frequently involving elements of apprehension, motor tension and autonomic over-activity [2].

On the other hand, IHD is a condition where the cardiac blood supply is reduced or obstructed by atherosclerosis formation in the coronary arteries. Both GAD and IHD often present similarly, given the substantial overlap in their symptoms. This will be further elaborated in our case report below.

Case Report

L, a 78 years old Chinese male first presented at the psychiatric clinic in 2014 with depressive symptoms. According to L, his low mood started since his son passed

away due to pancreatic cancer one and a half year ago. It is noted that he had underlying Type II diabetes mellitus and hypertension, along with elevated low-density lipoprotein (LDL) levels at that point of time. He denies any substance use and cigarette smoking.

During his follow up in year 2015, L started experiencing anxiety and worsening insomnia. He claimed that he had difficulty sleeping, with his thoughts being preoccupied by concerns regarding his sleep and side effects of medications. L also mentioned that he felt constantly “on the edge” throughout the day. There were multiple somatic complaints noted at that time, such as pins and needles sensation in his extremities and trembling in his hands.

Despite being treated with various combinations and dosages of antidepressants and benzodiazepines, his condition had not significantly improved over the next two years. L became increasingly obsessed about his insomnia and was worried that it could not be cured. As his condition fluctuates, he often appeared restless when he comes for follow-up, as evident by hands tremors, breathlessness and worrying thoughts.

In March 2017, aside from his foregoing anxiety and sleep difficulty, L started developing paroxysmal nocturnal dyspnoea, with intermittent pins and needles sensation over his extremities. He was then referred to the cardiologist in October 2017 after experiencing persistent chest pain for six months. CT angiography was carried out, showing blockage in the left coronary artery. L then underwent an angioplasty on 4th December 2017 and he was discharged well 2 days after.

During his follow-up in early 2018, L expressed that he is feeling significantly less anxious and he is able to sleep well.

Discussion

Diagnosing cardiovascular disease in patients with anxiety can be challenging, given the considerable similarities in their clinical features. For instance, many somatic symptoms of anxiety disorders, such as sleeping difficulty, chest discomfort, restlessness and dyspnoea, are very common in patients with IHD or acute coronary syndrome (ACS). If one relies too heavily on these overlapping features in their clinical judgement, there will be a significant risk of missing out the underlying medical condition.

However, it is crucial to recognise cardiovascular diseases in anxiety patients. We suggest focusing on the key features of symptoms in history (e.g., chest pain on physical exertion and relieved by rest in stable ACS), and constantly keeping a lookout for any suspicious new onset symptoms. Collateral history from family members could also be helpful in identifying its timing and character.

Moreover, a few meta-analysis have shown that anxiety disorders are associated with higher risk of both cardiac morbidity and mortality [3, 4]. In a 2016 meta-analysis including 46 cohort studies, Connor and colleagues found that anxiety was linked to “41% higher risk of cardiovascular mortality, a 41% higher risk of coronary heart disease, a 71% higher risk of stroke, and a 35% higher risk of heart failure [3].” Although it is unclear if the associations are causal, the significantly elevated risks emphasise the needs for more efficient screening and preventative clinical measures for cardiovascular diseases among subjects with anxiety.

On the other hand, there are several physiological mechanisms that explain the

resemblances in clinical features of GAD and IHD [5]. Anxiety has been associated with decreased heart rate variability, which disrupts the cardiovascular autonomic homeostasis and auto-regulation of blood pressure [6]. Further, a large cohort study done by Pitsavos et al. [7] shown that individuals in anxious states were found to have higher levels of inflammation markers, which are involved in the development of atherosclerosis. Patients with anxiety also have impaired flow-mediated dilation of the vasculature, which suggests greater endothelial dysfunction, leading to the formation of atherosclerosis [8]. They also have greater platelet aggregation, which contributes to thrombus formation in blood vessels and myocardial ischaemia [9, 10].

Conclusion

Ischaemic heart disease (IHD) should be suspected in patients, especially elderly presenting with anxiety symptoms. A thorough physical examination, as well as an electrocardiography (ECG) or a CT angiography when appropriate, are crucial for ruling out underlying medical causes and preventing the misdiagnosis of a primary psychiatric illness.

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