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Case Report

Depression with Panic Episodes and Coronary Vasospasm

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Abstract

Variant (Prinzmetal's) angina is an uncommon cause of precordial chest pain characterized by transient ST elevation and negative markers of myocardial infarction. A patient with a prior history of depression and panic attacks who presented with chest pain. A cardiac event monitor positively documented coronary vasospasm, whereas the coronary arteries were angiographically normal. The chest pain apparently increased during the period that coincided with the patient's depression. Considering the possibility of bupropion-associated vasospasm, antidepressant therapy was adjusted to exclude this drug. Although we suspect that a routine use of cardiac event monitors in subjects with depression may be of coronary vasospasm in this patient population.

1. Introduction

Almost one third of patients with chest pain who undergo cardiac catheterization have coronary abnormalities [1]. Some cases of such chest pain are diagnosed

typically occurs at rest and is caused by intense coronary vasospasm by exercise and is most commonly due to coronary atherosclerotic abnormalities are found, chest pain may be associated and is often a comorbidity of psychiatric disorders in patients who present with chest pain. Here we report the case of a patient who was presented to the emergency room with chest pain.

2. Case Report

This is the case of a 61-year-old African-American woman who was admitted to the emergency room in May 2008 with an acute episode of left-sided chest pain, diaphoresis, and an impending sense of doom lasting 2-3 minutes during this event.

She was admitted and placed on a cardiac telemetry monitoring unit. Her electrocardiogram, telemetry, and serial cardiac enzymes did not show any abnormalities. There was no family history of coronary artery disease. Her medical history included asthma, and a history of smoking (quit 10 years prior) and alcohol abuse. The patient voiced concern that her chest pain may have been related to her anxiety. She recalled having similar chest pain 10 years ago. At that time, the chest pain was diagnosed as panic attacks. She was treated with diazepam and sertraline. As a young adult, the patient described other past psychiatric medications included fluoxetine, buspirone, and clonidine. Her family history included a father with depression, a brother with alcohol abuse, and a completed suicide (7 years ago). At the time of hospitalization, she was scheduled for an outpatient stress test.

Six days after hospitalization, she was seen in the medical clinic. She was treated with sertraline 50 mg daily, which was titrated up to 50 mg at week 3. A referral was made to a sleep clinic.

One month after being started on sertraline (early June), she was still complaining of depression and fatigue. She was not tolerating 50 mg of sertraline but without much benefit. She described increased anxiety than she had previously in psychiatric care years ago. She also reported a sensation of heart racing in the past month. Laboratory analysis was normal. A referral was made to a sleep clinic as she had been diagnosed with obstructive sleep apnea (OSAP) on a polysomnogram (PSG) test, but failed to follow up. Bupropion (Bupropion SR, 150 mg daily) was given for depression with anergia, and alprazolam was given for anxiety as she was still complaining of depression and fatigue on bupropion. The patient was still complaining of depression and fatigue.

Three weeks after the bupropion dose change, the PSG results confirmed obstructive sleep apnea. She was placed on continuous positive airway pressure (CPAP) therapy. At her next sleep clinic appointment, the patient experienced substernal chest pain. The sleep clinic physician from the sleep clinic made a referral to cardiology, as she was still complaining of chest pain and a stress test. In a psychiatric follow-up (one week after her chest pain was better), she was doing better, including improved mood and less fatigue and anxiety.

One week later, the patient was seen in the cardiology outpatient clinic. She reported 15 episodes of severe substernal chest pain lasting 5 to 10 minutes. The symptoms were neither exercise-induced nor predictable. She reported no associated diaphoresis or shortness of breath. The chest X-ray was normal. The echocardiogram showed left ventricular hypertrophy. The cholesterol panel was unremarkable. A stress test and a coronary angiogram were performed. The coronary arteries were angiographically normal.

abnormalities, and the ejection fraction was normal. The patient was hospitalized for 5 days the patient experienced two recurrences of her symptoms. These were associated with anxiety-provoking chest pain (Figure 1). There were no arrhythmias recorded. The patient was diagnosed with variant angina and started on amlodipine (2.5 mg daily) and isosorbide mononitrate.



Figure 1: Representative ECG recordings. Panel A shows ECG recordings during the chest pain and Panel B shows ECG recordings during the chest pain and recovery.

In a subsequent psychiatric follow-up, the patient was free of chest pain, off of all medications, and sertraline was increased to 75 mg daily because it was found to be effective for her coronary vasospasm.

3. Discussion

Prinzmetal's variant angina is an uncommon cause of precordial negative markers of myocardial necrosis [2, 4]. This type of angina has an unclear etiology. A definitive diagnosis requires demonstrative ST-segment elevation (achieved by hyperventilation, acetylcholine, or ergonovine). The reported incidence of variant angina ranges from 4% to 32%. In our study, the elevation associated with the anxiety-provoking chest pain was documented.

There are no studies on the incidence of panic disorder in patients with chest pain. In a third of chest pain patients with angiographically normal coronary arteries, it is worth noting that hyperventilation, a proposed provocative test for variant angina, accompanies panic attacks and hence could trigger coronary vasospasm. Systematic research has been conducted on the occurrence of chest pain. In several cases of coronary vasospasm leading to ischemia were documented. It appears to be less common in patients with panic disorder and Takotsubo cardiomyopathy, also known as broken heart syndrome.

The case we present here is unusual because in addition to documented chest pain, a component of the disorder presented as depression with panic attacks. Furthermore, although the patient had been diagnosed with panic disorder, it was absent until the episode that led to her most recent hospitalization. The frequency of chest pain increased dramatically (up to 15 episodes in 3 months) during treatment with bupropion for treatment of the patient's depression.

It has been suspected that bupropion may be associated with chest pain. In a study of young males were diagnosed with ST elevations, normal coronary arteries were associated with the use of bupropion [11, 12]. The main mechanism of action is inhibition of the central nervous system presynaptic dopamine and norepinephrine release and it appears that bupropion exerts a direct action on the human myocardium. Since our patient had a diagnosis of prior angina attacks, it appears that bupropion may have exacerbated her chest pain. While majority of patients improve after the initial 3 - 6 month period of frequent symptoms, the return of symptoms have not been elucidated [14].

4. Conclusion

This patient, who had a prior history of depression and panic attacks, presented with chest pain and ST-segment elevation during chest pain and recovery.

chest pain. Using a cardiac event monitor, she was documented associated with anxiety-provoking chest pain. We noted that the during the period that coincided with the introduction of bupr Considering the possibility that bupropion may have a negative i therapy was adjusted to exclude this drug. Although Prinzmetal's needed to assess the routine use of cardiac event monitor in subje good example of how a close collaboration between cardiologists a

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