

Depression masquerading as chest pain in a patient with Wolff Parkinson White syndrome

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Wolff Parkinson White (WPW) syndrome is a condition in which there is an aberrant conduction pathway between the atria and ventricles, resulting in tachycardia. A 42-year-old patient, who was treated for WPW syndrome previously, presented with chronic somatic pain. With her cardiac condition in mind, she was thoroughly worked up for a recurrence of disease. As part of routine screening of all patients at our pain clinic, she was found to have severe depression as per the Patient Health Questionnaire-9 (PHQ-9) criteria. After ruling out sinister causes, she was treated for depression using oral Duloxetine and counselling. This led to resolution of symptoms, and improved her mood and functional capability. This case highlights the use of psychological screening tools and diligent examination in scenarios as confusing as the one presented here. Addressing the psychological aspects of pain and adopting a holistic approach are as important as treatment of the primary pathology. (Korean J Pain 2016; 29: 262-5)

Key Words: Chronic pain; Depression; Duloxetine; Psychological tools; Somatic pain; WPW syndrome.

Wolff Parkinson White (WPW) syndrome is a disorder affecting the conducting systems of the heart, which alters its normal rhythm. It is referred to as a pre-excitation syndrome, in which there is the presence of an abnormal accessory pathway between the atria and the ventricles. This causes the ventricles to contract prematurely, resulting in a supraventricular tachycardia [1,2].

Most patients with WPW syndrome lead a normal life with minimal or no symptoms. A few patients experience symptoms such as palpitations, dizziness, and syncope, which occur due to the dysrhythmias and altered circulatory dynamics. Patients with this syndrome rarely present with ischemic chest pain. The etiology of chest pain

can be due to transient vasospasm of the coronaries, causing ischemic pain [3,4].

However, not all patients who present with chest pain are found to have symptoms of an ischemic origin. A large group of patients presenting with chest pain may have non-cardiac etiology, despite having a cardiac condition. In such scenarios, it becomes challenging to ascertain and prove the cause of chest pain as that of non-cardiac origin, more so if a primary cardiac condition has been established.

Here we present a peculiar case of a female patient with WPW syndrome, who was treated for the condition a few years ago. She was referred to us from the cardiologist

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for treatment of chest pain, which started two years following treatment of WPW syndrome. With detailed evaluation, we could elicit that the cause for the chest pain was not due to her previous cardiac condition. A screening tool for depression, the PHQ-9 questionnaire, was used to diagnose severe depression in this patient. The causal factor was addressed by therapy with the antidepressant medication duloxetine, along with psychological support and counseling, which led to resolution of her symptoms. This case highlights the use of simple screening tools, diligent examination, and their importance in scenarios as confusing as the one presented here.

CASE REPORT

A 42-year-old female patient presented to our pain clinic with complaints of diffuse anterior chest pain for the past two years. She complained of pain radiating from the chest to both the upper limbs, in a diffuse distribution up to the wrists. The pain was continuously present and of a throbbing nature. Pain was of moderate intensity with a Visual Analog Scale (VAS) score of 60 to 70 mm, occasionally rising up to 100 mm. The pain was not associated with sweating, palpitations, or loss of consciousness. She stated that the pain was aggravated at times while performing household work, and was relieved by lying down or sleeping. She complained of a mild tingling sensation at times. She had no other comorbidities.

The patient was referred to the pain clinic by cardiologists in our institute. She previously had complaints of palpitations and an episode of syncopal attack about 4 years earlier; following which she was diagnosed as having supraventricular tachycardia secondary to an aberrant left postero-lateral conduction pathway. This bundle caused pre-excitation of the ventricles, commonly labeled as Wolff Parkinson White syndrome. The aberrant conduction bundle had been ablated using radiofrequency technology. Her postprocedural course was uneventful and she had no further symptoms and did not require regular medications.

However after two years, she started feeling pain in the anterior chest diffusely, which radiated to both upper limbs up to the wrists. The pain was bothersome and she complained of loss of appetite and decreased sleep associated with the pain. She had been on regular follow up with the cardiology department for these complaints and had been thoroughly worked up to rule out resurgence of

WPW syndrome or other cardiac pathology. She underwent stress echo testing which revealed that she had good effort tolerance with 10 metabolic equivalents (MET). A coronary angiogram was done to rule out ischemic pathology, and she was found to have a normal coronary system with good flow in all the arteries. A 24 hour Holter monitoring was repeated to look for episodes of supraventricular tachycardia. Holter monitoring only revealed a few occasional ventricular ectopics, which were not significant and did not explain her symptoms. After a thorough cardiology work up with negative results, she was referred to us for control of her pain.

At the pain clinic, she was examined to look for any local pathology and tender points. There were no significant findings on examination. Breast tissue examination was also normal.

In our institute, it is customary for all patients to fill out a questionnaire regarding their pain and associated features, before meeting the pain physician. The questionnaire includes the Patient Health Questionnaire-9 (PHQ-9), derived from the Diagnostic and Statistical Manual of mental disorders IV (DSM-IV) axis for depressive disorders. Our patient had a score of 21 on a maximum of 27 on the PHQ-9 scale, which falls under the category of severe depression. On asking her, she revealed that she felt depressed and had a lack of motivation to do daily activities. There were no obvious stressors to which her mood could be attributed.

Keeping in mind her high PHQ-9 score, and due to the absence of any other obvious causes of pain, we started her on oral duloxetine with a single dose of 30 mg in the morning. She was asked to report after continuing the medication for a period of 3 weeks. The patient and her family was counseled and reassured regarding the benign nature of her pain, and were assured that it would soon resolve following treatment with the prescribed medications.

On her subsequent follow up, the patient experienced a 50% reduction in pain. Her VAS score had reduced to 30-40 mm. She mentioned that the continuous pain was substantially lower and the pain only occurred as episodes. There were no complaints of palpitations or fatigue. At this visit, the dose of duloxetine was escalated to 60 mg once a day. By the time of the next visit after 6 weeks, she was almost pain free. She had 1 to 2 episodes of pain per day with a VAS of 10 mm which was not bothersome. Her mood was considerably better, and she was also able to

fall asleep easily. The PHQ-9 score was re-evaluated and considerable improvement was noted with a score of 12 of 27. She is on regular follow up with us now for the past 4 months and is free from chest pain. The future plan consists of slowly tapering oral duloxetine and eventually weaning her off medications based on clinical judgment with regular follow-ups.

DISCUSSION

Wolff Parkinson White syndrome is a condition in which pre-excitation of the ventricles takes place, due to which life threatening arrhythmias can occur. Common presentations of this syndrome occur due to the arrhythmias, manifesting as palpitations and syncope. Rarely however, do patients also present with chest pain as a primary complaint.

Treatment of mild and asymptomatic cases consists of anti-arrhythmic medications. Treatment of symptomatic cases includes radiofrequency ablation of the aberrant conducting bundle which is responsible for the pre-excitation, which markedly reduces risk of sudden cardiac death [5].

Chest pain occurring in WPW syndrome is thought to be primarily due to associated pathology in the coronary system, causing myocardial ischemia [3,4]. Incidence of chest pain following RF ablation for WPW syndrome has been reported and thought to occur due to dissection of the coronary artery during the procedure, causing myocardial ischemia [6,7]. At times, coronary artery disease may be present concomitantly, which can account for chest pain. There have been reports of coronary artery disease presenting as primary WPW syndrome [8]. However, any abnormality in the coronary circulation was ruled out by a normal coronary angiogram and good effort tolerance by stress testing.

The patient was treated for depression, as per the PHQ-9 criteria based on the DSM-IV system, which is a validated tool for diagnosis and treatment of depression. The PHQ-9 is a module consisting of nine items from the extensive PHQ questionnaire, useful in screening for depression. The PHQ-9 is a dual purpose screening tool in that, with the nine questions and scoring, one can not only provisionally establish a diagnosis of depression, but also decide on the various treatment strategies [9]. A score in the range 21 to 27 is suggestive of severe depression,

which requires pharmacotherapy and psychological support. Scores in the range of 10 to 14 require less intense plans and treatment mainly in the form of counseling and psychosocial support, along with minimal pharmacotherapy if required.

Patients with anxiety and depression can present with somatic symptoms such as chest pain, which may be seen in up to 41% of patients [10]. Chest pain as a symptom of depression follows no particular pattern and can mimic symptoms of cardiac chest pain. After ruling out sinister causes, we treated our patient for depression, which led to resolution of her symptoms. Subsequent visits also showed a decreasing trend in the PHQ-9 score.

It is well known that depression can present as chronic pain syndrome and chronic pain can present with depression. Our patient improved on the PHQ-9 score, moving from being severely depressed to moderate depression. This improvement of her score also corresponded with clinical improvement of her symptoms.

Our patient had a preceding history of cardiac illness which could be the cause of the localization of pain to the chest. Hypervigilance and heart-focused anxiety has been well known to be a cause of non-cardiac chest pain [11,12]. However, it is known that chest pain can occur in patients with depression. In a study by White and colleagues [10], many patients with anxiety and depression presented with primary non cardiac chest pain. There are other studies which also highlight the importance of addressing psychological issues in management of non cardiac chest pain [13-15]. Pain threshold has also been found to be lower in patients with depression, which may also be the cause of increased pain perception and chronic pain. Even though duloxetine may not directly cause analgesia, it probably caused significant improvement of patient's symptoms due to improvement in mood and allaying anxiety. A review on the use of duloxetine showed a moderate level of evidence for use of the drug in patients with pain associated with depressive symptoms [16].

Duloxetine is a balanced serotonin and norepinephrine reuptake inhibitor used as an adjunct in treatment of chronic pain conditions, as it is a well tolerated drug with rare serious side effects. Other therapeutic options in this case would include amitriptyline, a tricyclic antidepressant, which has an excellent profile with anti-neuropathic and antidepressant actions. However, it was avoided in this particular case due to the known cardiac side effects of

the drug [17].

This case highlights the importance of using simple clinical tools while dealing with patients of chronic pain. Tackling chronic pain often requires a multidisciplinary approach apart from assessment of nociceptive pain alone. A useful tool which we use in our daily practice includes a two page questionnaire exploring the various aspects of pain comprising VAS scoring, the Doleur Neuropathique 4 (DN4) questionnaire for neuropathic pain, employment status, quality of life assessment, and the PHQ-9 tool for depression. The effectiveness of multidisciplinary models in the treatment of chronic pain has been well documented in the literature [18].

In this case, had the screening test not been used, it would have led to confusion and misdiagnosis of the patient's condition, only prolonging her suffering. A multidisciplinary approach, careful evaluation, and addressing psychological aspects go a long way in the management of chronic non-cardiac chest pain. Underlying depression can be the cause of chest pain, even in patients with known cardiac pathology. Adopting a holistic approach and addressing the psycho-social aspects of pain, along with treatment of the primary condition is of paramount importance in such patients.

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