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Case Presentation

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Irritability and the Development of Depression during Cancer Treatment: A Case Report

Amy Zhang, PhD, MS, Frances Payne Bolton School of Nursing, Case Western Reserve University, 231U Samson Pavilion, 9501 Euclid Avenue, Cleveland, OH 44106, USA

Abstract

Depression is prevalent among cancer patients and has a significant adverse impact on the outcome of cancer treatment. Early detection and intervention of mood dysregulation during cancer treatment can constitute a good strategy for preventing and minimizing depression in cancer patients. This case report presents information on the progression of mood dysregulation from irritability to depression during the initial 9 months of cancer treatment. It characterizes the mood of irritability and its multidimensional manifestation, distinguishes irritability from manifestation of anxiety and depression, and illustrates a relationship between irritability and depression from a cancer patient's perspective. This case report offers a meaningful clinical insight into the developmental process of depression, hence providing a better understanding about early detection of depression in patients diagnosed with cancer.

Keywords: Irritability; depression; anxiety; cancer treatment; mental health

Introduction

More than half of American cancer patients experience depression [1,2], which is a significant predictor of cancer death [3,4]. Unresolved depression significantly hinders patient's recovery to pre-diagnosis baseline and the return of normal life [5,6]. Yet, depression remains a challenge to medical interventions [7]. Identifying early signs of mood dysregulation in cancer patients will open an opportunity of early intervention, therefore increasing the chance of treatment success. This case report provides rare first-hand information on a patient's experience of irritability and its relation to the development of depression during cancer treatment.

Case Presentation

In an interview study of 51 Chinese cancer patients reported elsewhere [8], one of the patients is a middle-aged female who provided a detailed account of her experience of irritability and its difference from experiencing depression and anxiety. The patient was diagnosed with early-stage stomach cancer nine months prior to the interview encounter. She underwent surgery immediately, then home rested and traveled over the next months. At the regular 6-month follow-up appointment, she had low blood account and reported a gradual loss of body weight. An esophagogastroduodenoscopy (EGD) confirmed blood oozing in association with gastritis and abdominal distension. During the next two months the patient consulted experts from four top hospitals in the metropolitan area and was told unanimously that while tumors were removed, her remaining condition would be hard to treat and likely remain to be lifelong. For the meantime, her weight continued to drop from 105 to over 70 lbs. In the 8th month after her surgery, blood oozing was stopped under treatment, and she entered a nutrition program to take prescribed supplements instead of regular meals to treat her symptoms. In the post-surgery 9th month, she was diagnosed with depression and began to take anti-depressant medication.

The patient reported that her mood, sleep, and appetite were normal without changes after receiving the initial cancer diagnosis, because her cancer was found early and she had "hope" for a cure. Not until the 6-month follow-up appointment and the confirmation of side effects due to the surgery did she begin worrying about taking a second surgery and the possibility of its failure, a lifelong battle with disturbing stomach symptoms like bloating, pain, and noisy, wave-like intestine movements, and blaming herself for being a burden to the family. She started to feel irritable at this time. In the post-surgery 8th month, following a 30-lbs weight loss she started worrying that cancer might return, leading to death. She reported an increasing irritable mood and an observation that irritability was at its peak after taking nutrition supplements for 3 days. The supplements were suspended when a skin rash showed up as a sign of allergy, and irritability decreased; then the supplements were resumed at a slower pace to avoid side effects. In the post-surgery 9th month, the patient's sleeping time was cut by 2 hours due to an environmental change in and outside of home. She then developed insomnia and fatigue and sought medical treatment. This landed her on a visit to a psychiatrist and the start of anti-depressant medication.

The patient described irritability as a feeling of agitation about everything. She said that bodily sensations like intestine contractions with each meal made her feel uncomfortable and this discomfort upset her emotionally. The unstoppable bodily discomfort led to constant bad feelings and irritability. As the time went by, she realized that she was "unable" to make this discomfort go away, and as frustration kicked in, irritability worsened. When being irritable, she was not thinking of anything, and her mind (brain) went empty (blank). However, she could feel some pressure on the chest and the back of her head. Behavior wise, she wanted to be alone and did not want to bother to talk with anybody, and her facial expression was intense without pleasantness.

The patient compared the irritable feeling with stress-induced anxiety and drew a line between them. She mentioned that when she was taking an enteroscopy in the post-surgery 6th month, she felt nervous but not irritable. She was fearful about how enteroscopy

might feel or what might be found. At that moment, she had a racing heart and sweaty hands. She said this anxious feeling was similar to her time of entering a national exam at which she was so nervous that she had frequent urination. In the end, she said that irritability felt worse than nervousness because it blanked her mind and took her joy away.

The patient also compared irritability with depression. When being irritable, she would be preoccupied with this lousy feeling while losing interest in doing something else. At those times she had "no heart" and therefore "no energy or motivation" for anything else. However, she would not describe those moments as "low mood" or "hopeless" because she would bounce back once irritability was gone; for example, she would go dancing or singing with others. As irritability was coming and going, she noticed that the morning was especially challenging while her mood and energy lit up in the afternoon. She recognized that her stomach symptoms did not differ between the morning and the afternoon, but her feelings toward those symptoms were more intense in the morning. Such mood swings gradually became a down spiral trend. Three weeks into the 8th post-surgery month, she began to wake up early and could not go back to sleep due to worrying thoughts. In her 9th post-surgery month, with an increasing noise level in and outside of the home, she had trouble falling asleep and had woken up early, resulting in a 5-hour sleep daily. Her energy was gone now, and she could not function as she used to. It was then she received a diagnosis of severe depression.

Discussion

Clearly the patient has distinguished irritability from anxiety as anxiety related to underlying fears and irritability was an agitative state with a physical origin. Both mood states were accompanied by physical symptoms with subtle difference: A sense of pressure on chest and head in irritability as opposed to CNS-based palpitations and sweating in anxiety. The patient also described a relationship between irritability and depression. When irritable mood became repetitive and recycling without a proper intervention, it then progressed into a sustaining loss of interest and low mood – a depressive state that was most recognizable in a loss of sleep to ruminative thoughts and fatigue with no energy. It is plausible that with increasing irritability, morning cortisol was released and contributed to morning sluggishness and low mood, and eventually depression. This inference of psychoneuroimmunological interaction is supported by initial evidence that irritability and immunological biomarkers (IL-6 and hsCRP) significantly correlate at baseline and independently predict the occurrence of depression in cancer patients over a period of cancer treatments **[9].** Since a progression from irritability to depression needs time, this offers a window opportunity to capture mood dysregulation early to allow an early intervention that may prevent depression or its worsening.

This case has demonstrated that irritability is a distinct mood state with physical, mood, and behavioral manifestation that can evolve into depression. The author and colleague have developed and published a new measure of irritability, The Irritability Scale-Initial Version (TISi),that can be utilized to assess the level of irritability along the multi dimensions, hence assisting in early detection and intervention to irritability **[10,11].** Literature has shown that irritability is as prevalent as depressive symptoms in the general population **[12].** With better understanding of the role of irritability in the

development of depression and available measurement tools, we shall have an increasing chance of detecting mood dysregulation and intervening early to improve mental well-being of cancer patients.

Conclusion

This case report shows that irritability is a mood state with multidimensional symptoms and distinguishable from anxiety and depression. It may interact with morning cortisol as a stress hormone and develop into depression. Measuring irritability and treating it seriously may offer a way of preventing depression or reducing its severity. Therefore, further scientific investigation of irritability and its role in the development of depression in cancer patients is warranted.

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