Short Communications

Psychological Distress across the Course of Care: A Case Study from Implantable Cardioverter Defibrillator to Cardiac Transplantation Evaluation

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Summary: The psychological distress of cardiac patients can complicate treatment or the recovery process. This case study presents a 47-year-old male recipient of an implantable cardioverter defibrillator who experienced multiple, consecutive shocks and subsequently developed anxiety and depressive difficulties. Psychological treatment to diminish these symptoms was employed. Despite declining cardiac function, the patient made significant progress in managing this negative affect. Subsequently, he was evaluated for cardiac transplant, and this treatment progress became critical evidence of his psychosocial suitability for transplant.

Key words: implantable cardioverter defibrillator, cardiac transplant, patient education, psychological distress

Introduction

The effective medical management of seriously ill cardiac patients includes consideration of relevant psychosocial issues.¹ Consultation with mental health providers affords cardiac treatment teams and patients the opportunity to minimize the impact of psychosocial difficulties associated with changes in health status. This case study examines the unique adjustment issues associated with receiving an implantable cardioverter defibrillator (ICD) and undergoing evaluation for cardiac transplantation as observed in one patient with an exceptionally complicated psychosocial profile.

A recent literature review of ICD-related psychological issues outlined risk factors associated with complicated adjustment to the device.² Such risk factors include young age (< 50 years), high ICD shock rate, and lack of education about the device, and their influence on medical outcomes will be highlighted in the case study. While most ICD recipients adjust to the device,³ studies suggest that 13 to 38% of patients with ICD experience diagnosable levels of anxiety and 24 to 33% report depressive symptoms which may complicate medical intervention.² Similar findings have been identified in cardiac transplant candidates who typically experience transitory distress, but reliably report improved quality of life post transplant.⁴ In this case, the patient's history of depression, poor social support, and poor adherence to medical regimens put him at further risk for poor outcomes, as these circumstances are often considered to be contraindications to eligibility for cardiac transplantation.⁵

The purpose of reporting this case study is to encourage the timely identification of patients with unrelenting psychological symptoms, with the intent to demonstrate the utility of referral to mental health providers.

Case Report

The patient was a 47-year-old, married Caucasian man from a rural community. He was referred to the Psychology Service after his medical team identified his significantly depressed mood and ICD-related fears associated with experiences of multiple shocks. The patient reported three episodes of multiple shock over the course of 1 month shortly after ICD implantation, including the receipt of 17, 6, and 12 shocks. Distress associated with the ICD storms was compounded by the patient's poor understanding of the ICD function; he reportedly did not expect to receive electrical stimulation from the device prior to his first shock episode. Additional stressors associated with the ICD storms included social embarrassment as two of the storms occurred at a local diner and were witnessed by friends and family, and fear of inappropriate care when the rural-based emergency response team was not familiar with the device or appropriate intervention.

In response to augmenting fears and confusion about the ICD, the patient expressed suicidal ideation, including thoughts of "cutting out the ICD with a fishing knife." During

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the same time period, the patient began to experience additional symptoms of depression including somnolence, decreased appetite, social withdrawal, and feelings of hopelessness. Fears of receiving additional ICD shocks resulted in extreme behavioral avoidance of objects and situations that he believed could trigger an ICD shock. For example, the patient began using a broom to activate the microwave to avoid perceived electromagnetic interference, and spent most of his time lying still in bed to avoid physical exertion.

Medical history included class III–IV congestive heart failure secondary to severe ischemic cardiomyopathy, two myocardial infarctions, and prior coronary bypass surgery. Procedures during the 2 years prior to the initial psychological evaluation included multiple percutaneous transluminal coronary angioplasty (PTCA) procedures, the placement of seven cardiac stents, and implantation of an ICD for ventricular tachycardia. On two separate occasions, intra-aortic balloon pump support was required during attempted coronary angioplasty and stent placement. The left ventricular ejection fraction was recorded at 15 to 20%. Medications included furosemide, potassium chloride, enalapril maleate, digoxin, isosorbide mononitrate, simvastatin, omeprazole, nizatidine, metoprolol tartrate, aspirin, sublingual nitroglycerin, and fluoxetine. Further evaluation revealed that the patient's symptoms of depression and fear interfered with his ability to attend consistently to his medication regimen, engage in recommended exercise, contribute to impending medical decisions, and participate meaningfully in his family life. Over the next several months, the patient's medical condition worsened such that his attending cardiologist consulted the cardiac transplant service for a full multidisciplinary evaluation.

Problem areas targeted for treatment by the Psychology Service included the patient's potential for dangerous behavior with associated symptoms of depression and a poor understanding of the ICD. Initial intervention focused on stabilizing the patient's suicidal ideation with supportive therapy and development of a plan to assure adherence to his antidepressant medication. Brief cognitive and behavioral skills training was delivered to assist the patient in his efforts to cope with depressive symptoms. Education about the purpose of the ICD, implications for day-to-day functioning, and normalization of ICD-related fears was provided to the patient and his wife. After consultation with the patient's physician, appropriate levels of physical exertion and exposure to electrical appliances were discussed. To decrease the patient's concerns associated with experiencing additional ICD shocks, his fears were addressed and a response plan in preparation for the next shock episode was identified.

Several psychosocial concerns were identified during the evaluation for cardiac transplant. While clearly an appropriate candidate for transplant from a medical standpoint, he was not initially listed, in part, because of psychosocial factors. These factors included his history of depression, periods of poor adherence to medical regimens, and lack of social support. In the several months following the transplant evaluation, the cardiac transplant team monitored the patient's progress while addressing the aforementioned psychosocial concerns during ongoing treatment with the Psychology Service. The patient made significant improvements in these areas, as outlined in Table I. He was eventually listed as a Status 2 cardiac transplant candidate, and treatment with enhanced external counselling was initiated.

TABLE I Medical risk factors and patient progress

Risk factors for poor medical outcomes	Patient characteristics	Patient progress
Suicidal ideation	Desire to "cut out ICD with a knife" Increased apathy toward medical treatment	No suicidal ideation Recognized need for the ICD Active collaboration with treatment team
Young ICD recipient	47-year-old male	Addressed frustration with lifestyle changes
ICD storms	Three episodes of six or more ICD shocks	Developed a response plan for next shock episode Discussed ICD-related fears
Poor understanding of ICD function	Lack of education regarding safety issues Significant avoidance behavior	Verbalized function of the ICD and asked appropriate questions about safe activities Began to perform light housework and engage in regular recreational activities
Clinical depression	History of depression and poor medication adherence Current symptoms of mild depression	Increase awareness of precursors to depressed mood Active coping with cognitive and behavioral skills
Poor social support	Isolated in a rural community	Outreach to relatives as possible respite caregivers
Familial distress	Concerns about patient's health status	Discussed implications of not receiving a cardiac transplant Brief couple's focused therapy

Abbreviation: ICD = implantable cardioverter defibrillator.

Discussion

This case study exemplifies the management of ongoing psychological distress in a relatively young patient with severe cardiac disease. The case is of particular interest because it spans from the initial referral for evaluation of a patient's suicidality following three ICD storms to his evaluation for cardiac transplant several months later. One purpose of reporting the case study was to underscore the significance of risk factors for poor adjustment to the ICD. As described by Sears *et al.*,² the patient demonstrated a classically conditioned response to his fears via hypervigilance to the possibility of being shocked again, and subsequent avoidance behavior. Patients are particularly at risk for such conditioned responses and psychological distress after experiencing multiple shocks during an ICD storm.^{6,7} In this case, psychological intervention allowed the patient to formulate accurate beliefs regarding how little his behavior contributed to the occurrence of shocks, and allayed his unrealistic fears about the device. Of interest is that fact that after several months of psychological intervention the patient experienced an episode of three ICD shocks and was able to cope successfully with the situation without a rebound of fears.

The patient's young age was also associated with complicated adjustment to serious cardiac illness via expectations of being able to return to work and recreation. These age-appropriate, but not health-appropriate expectations resulted in heightened frustration, and eventual depressive symptoms. Assisting the patient to redefine acceptable levels of activity allowed him to resume safe recreational activities that he enjoyed. Returning to such activities with his family and friends was especially significant to the patient given realistic limitations on his life span if not successfully transplanted. Increased social activities had positive effects on the patient's mood status as well. Enhanced mood and social interaction contributed to the patient's ability to adhere to the recommendations of the cardiac treatment team over time.

Conclusions

Enhanced quality of health care after incorporating psychological intervention is demonstrated here. Both receiving multiple ICD shocks and being evaluated for cardiac transplant present unique psychosocial adjustment issues for all patients. Patients at risk for complicated adjustment may experience psychosocial distress that cannot be effectively managed by busy medical treatment teams. Adept referral to mental health providers by the cardiac treatment team allows patients with significant levels of psychological distress to be formally treated and enables the patient to enjoy a more positive quality of life while living with serious cardiac illness.

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