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The need for a multidisciplinary approach to pain management in advanced cancer: A clinical case

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ABSTRACT

Advanced cancer patients are often affected by multiple complex symptoms brought about by persistent nociceptive stimuli and intense psychosocial distress. One such complex symptom, cancer pain, has continued to pose a challenge in medical management even though the concept of total pain was described several years ago by Cicely Saunders. Oftentimes, the application of a multidisciplinary approach is delayed after numerous opioid dose escalations and invasive procedures have been performed. The case presented here highlights the importance of timely multidisciplinary intervention and the use of an acute palliative care unit, which resulted in adequate pain control after multiple medical and invasive procedures that caused toxicities.

KEYWORDS: Cancer pain, Multidisciplinary approach, Opioid management, Palliative care unit, Total pain

INTRODUCTION

Pain is one of the most common and distressing symptoms experienced by cancer patients. Some 30 to 50% of cancer patients undergoing active treatment for solid tumors and 70–90% of patients with advanced disease experience chronic pain (Portenoy & Lesage, 1999). Patients with advanced cancer experience physical, psychological, family-related, healthcare facility-related, emotional, spiritual, and existential distress, all of which contribute to "suffering" (Cherny et al., 1994; Portenoy et al., 1994):

> Suffering can be described as an aversive emotional experience characterized by the perception of personal distress that is generated by adverse factors undermining the quality of life. The defining characteristics of suffering include (a) the presence of perceptual capacity, (b) that the factors undermining quality of life are appraised as distressing, and (c) that the experience is aversive. (Cherny et al., 1994)

Cicely Saunders defined the concept of total pain as "the suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles" (Richmond, 2005). An understanding of this concept is important for accurate diagnosis and appropriate symptom management in patients with advanced terminal illness, as total pain might be refractory to conventional strategies. Opioids are one of the most important medications used for management of cancer pain (Hanks et al., 2001). However, a lack of comprehensive pain assessment and proper titration of opioids can result in serious toxicities (Ripamonti & Bruera, 1997).

In the present paper, we report on a patient who illustrates the importance of skilled assessment of

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cancer pain and appropriate management of symptoms using an interdisciplinary approach in a palliative care unit. This patient also highlights the role of palliative care units for aggressive symptom management using pharmacological and nonpharmacological interventions for patients undergoing active cancer treatment.

CASE REPORT

A female in her seventies with metastatic non-small-cell lung cancer treated with chemoradiation and gamma knife surgery and currently enrolled in a clinical trial was referred to supportive care for management of pain secondary to mucositis and fatigue. She was using hydrocodone as needed with adequate symptom relief. The first visit also disclosed severe emotional distress and anxiety related to past abusive relationships and family members' cancer-related deaths. In addition, the patient screened positive for alcoholism on the Cut-down, Annoyed, Guilty, Eye-opener (CAGE) Questionnaire. The excessive alcohol use was temporally related to her abusive marriages.

A few weeks after the consultation, she presented to the emergency room with acute onset of mid-back pain, with imaging suggestive of old T5 and T10 compression fractures. She was seen by the anesthesiology cancer pain service and started on a fentanyl patch 12 μg/hour with hydromorphone as needed. She underwent vertebroplasty of T5, T9, and T10 with excellent analgesia the day after. However, this pain control lasted less than a week. She was then started on gabapentin and underwent bilateral transforaminal epidural steroid injection at T9, T10, and T11. The patient was seen two days later in the supportive care clinic with 10/10 back pain, not controlled with a fentanyl patch 25 μg/hour and hydromorphone 4 mg every 4 hours around the clock. At that time, fentanyl was increased to a 50-μg/hour patch with hydromorphone 4 mg every 2 hours as needed for breakthrough pain. She was also seen by our psychiatric nurse counselor and underwent an intensive counseling session.

After a new diagnosis of T11 vertebral fracture, she underwent another vertebroplasty without any pain relief. She was then seen in the supportive care clinic with uncontrolled pain, constipation, and self-escalation of the fentanyl patch to 75 μg/hour. Hence, she was opioid rotated to sustained-release morphine using equianalgesic doses and extensively educated about management of opioid-induced constipation. During the visit, the patient was noted to have severe emotional distress with multiple crying spells. At this point, a multidimensional approach was utilized by outpatient psychosocial intervention and referral to the physical medicine and rehabilitation service for assistance with strengthening. With close follow-up, she was later rotated to sustained-release oxycodone due to development of neurotoxicity and uncontrolled persistent pain on morphine. She presented to the clinic 48 hours later due to intolerance to oxycodone, high symptom expression, and emotional distress, which resulted in admission to the acute palliative care unit (APCU). Her morphine equivalent daily dose (MEDD) at the time of admission was 150. She was started on hydromorphone infusion, which was titrated according to her function rather than pain scores on the Edmonton Symptom Assessment System (ESAS) scale. During her APCU stay, a multidimensional approach including a pharmacological and interdisciplinary team was employed for management of her complex chronic pain. Methylphenidate was started for management of depression, opioid-induced sedation, and fatigue. She was also started on naproxen as an adjunctive analgesic.

Our counselor, chaplain, and social worker spent considerable time with her and provided supportive counseling and offered coping strategies. She had multiple episodes of emotional outbursts in the APCU, which helped her to express the anxiety and grief appropriately. She was also seen by our integrative medicine team and had similar emotional responses to music therapy. She was also seen in physical and occupational therapy every day to keep her active, out of bed, and ambulating. The patient responded very well to this multidimensional and interdisciplinary approach, with excellent symptom relief (Figure 1). We were able to rotate her to methadone 5 mg every 12 hours and hydromorphone 2 mg every 4 hours as needed. She was on this stable regimen for 48 hours before discharge. She was discharged home with a 60% reduction in her MEDD (60 compared to her admission MEDD of 150) and with an Eastern Cooperative Oncology Group (ECOG) functional status of 2 (compared to ~4 at admission).

DISCUSSION

Cancer pain is a complex phenomenon with physical, psychological, social, and cognitive domains (Ahles et al., 1983). Detailed and comprehensive assessment is the key to diagnosis of the cause of pain in this population. Appropriate diagnosis helps in formulating accurate management strategies, which can then prevent drug toxicity, unwanted surgical procedures, and the associated healthcare costs (Bruera & Watanabe, 1994).

The escalating opioid dose in our patient led to severe toxicity and worsening of her quality of life

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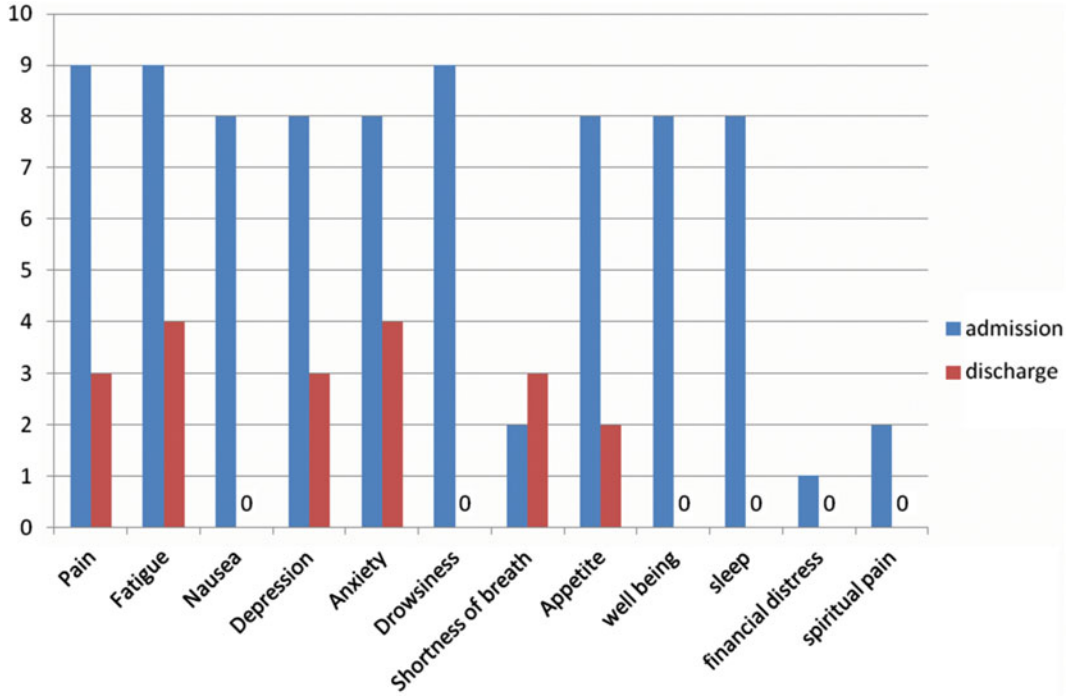

Fig. 1. Patient-reported symptoms on the ESAS scale at the time of admission versus discharge from the APCU (day 6).

(QoL). Opioid rotation has traditionally been used to manage this, but unfortunately it does not ameliorate the pain that stems from "suffering" and "psychosocial distress" (Mercadante, 1999; Mori et al., 2012).

Most patients with advanced cancer face multiple symptoms affecting their QoL. A unidimensional approach to pain might not help these patients, as symptoms are often interrelated and coexistent (Ahles et al., 1983). It is important to recognize this, to use a palliative care model of comprehensive symptom assessment, and to employ an interdisciplinary team to help these patients (Casarett et al., 2011). Multiple teams saw our patient separately, but she undoubtedly needed a more holistic approach to manage her pain, constipation, nausea, vomiting, anxiety, and depression.

Acute palliative care units (APCUs) are independent and closed units where palliative care physicians are the primary team providing optimal control of patients' symptoms and suffering with effective transition to end-of-life care. They provide an environment that is conducive to caring for terminally ill patients and their families. The quality of palliative care is found to be better in the APCU compared to that provided by a consult service, especially in patients near the end of life with a low symptom burden (Hui et al., 2010). In a recent survey, only 23% of cancer centers had dedicated palliative care beds, and at least half of the hospital executives had no plans to expand their palliative care programs (Stone et al., 2011). Traditionally, the scarcity of beds available for palliative care in hospitals limits the number of patients who can receive such intense care. Nevertheless, our patient exemplifies the role of such units in managing the dying patient or patients undergoing active cancer treatment where the goal is transition to hospice along with aggressive symptom management (Stallmeyer et al., 2003; Elsayem et al., 2011; Reddy et al., 2012). APCUs are not only cost effective but also represent excellent patient-centered care with goals consistent with those of the patients and their oncologists (Delgado-Guay et al., 2009). Our patient's poor performance status due to pain and uncontrolled symptoms was not only affecting her QoL but also keeping her from receiving further aggressive cancer treatment. An admission to APCU with the goal of aggressive symptom management and further follow-up with an oncologist could help patients with advanced cancer facing a high symptom burden as a roadblock to further therapy. This would require a clear understanding of the scope of palliative care and the work of APCUs by other physicians and hospital executives to bring about an increase in the number of these valuable units.

There were several factors that contributed to the overall symptom burden of our patient. She had symptoms of depression that contributed to the intensity of pain and other symptoms, as seen in her ESAS results (Figure 2). Undiagnosed depression

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can be a contributing factor to over-expression of pain or even a cause of pain in certain chronic nonmalignant pain syndromes (Archie et al., 2013). It also forms a part of the symptom clusters recently described in palliative care (Basile et al., 2012). The importance of diagnosing this and treating it with pharmacological and nonpharmacological approaches might benefit multiple symptoms experienced by patients with terminal illness. Many antidepressants have been proposed for use in palliative care settings. For this patient, we chose methylphenidate due to its varied benefits as a fast-acting antidepressant and as treatment for opioid-induced sedation and fatigue (Berenson et al., 2011; Yennurajalingam et al., 2013). The use of methylphenidate together with counseling and psychotherapy helped build active coping strategies for the patient that addressed her physical and psychological needs. Physicians should play an important role in recognizing these needs and using appropriate resources like an interdisciplinary team, which should include counselors, chaplains, and social workers.

Our patient underwent steroid injections and multiple vertebroplasties for management of pain without much response. Vertebroplasties and kyphoplasties are used for vertebral augmentation in both osteoporotic and cancer-related vertebral fractures (Ewing, 1984; Delgado-Guay et al., 2009). These procedures have been found by some to offer early and prolonged pain relief (Ewing, 1984; Kerr et al., 2012). However, the populations in most of these studies were very heterogeneous, which makes it difficult to assess the factors specifically associated with a positive response. The role of these procedure based on disease has been described, but no strong data have been found that delineate the patient-related factors that might affect outcome (McCall et al., 2013). Clinically, can we assume that no response to one procedure argues against the use of the same procedure for symptom relief? An awareness that pain expression in advanced cancer can be secondary to psychological, cognitive, and social issues mandates careful screening of patients to rule these out before attempting surgical interventions. Our case opens a window for further research in defining patient-related factors affecting outcomes with surgical versus nonsurgical management.

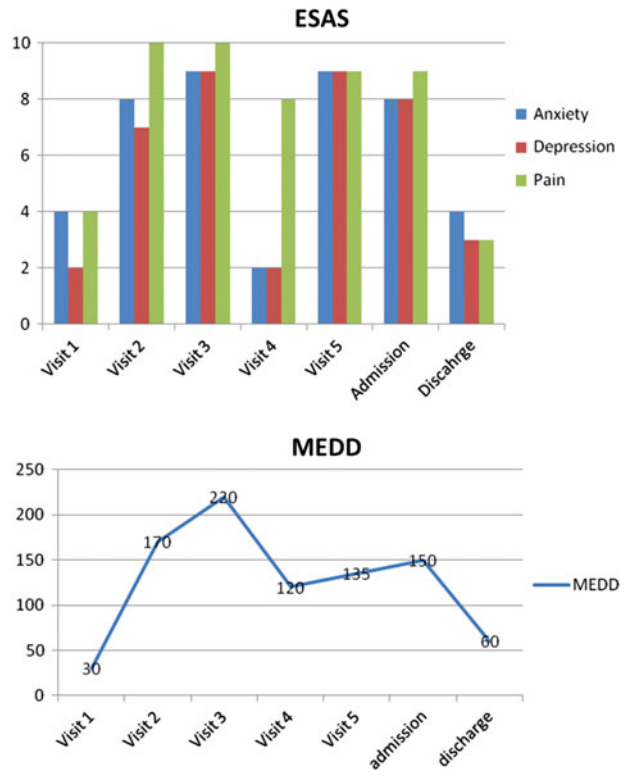

Fig. 2. Temporal relationship between ESAS pain, depression, and anxiety scores and MEDD. Expression of anxiety and depression correlates better with MEDD and opioid use compared to expression of pain that remains stable (high).

Music therapy, massage therapy, acupuncture, yoga, and tai chi have been studied in different settings for management of various symptoms and diseases (McKiernan et al., 2004; Mori et al., 2012). Our patient expressed grief regarding her diagnosis and the death of family members to a music therapist after a 60-minute session. The patient also engaged in songwriting, reminiscing over her past accomplishments, which helped her to relax as well as providing symptom relief. These complementary interventions can be tried as effective tools in patients with high symptom distress. The use of these integrative therapies might offer benefit without presenting any conceivable harm.

A potential complicating factor that can be perplexing in the management of suffering and total pain is chemical coping. Patients with advanced cancer may have a history of alcohol or illegal drug use, and the use of the CAGE questionnaire is an effective tool to help guide us in terms of suspicions of chemical coping and addiction to pain medications (Prommer, 2012). Patients who are coping chemically can be very difficult to manage if this diagnosis is missed. They can be demanding and are prone to opioid misuse and abuse, with the potential for anger, frustration, and loss of trust in the managing physicians. Response to treatment is better assessed by the use of functional rather than pain scores for these patients. Failure to do so might lead to opioid overdose and serious opioid toxicities. However, delivery of the CAGE questionnaire itself is very elusive over and above managing patients with a positive addiction history. It makes management very challenging and requires intense training of palliative care team members.

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FUTURE DIRECTION

This case report highlights the well-recognized phenomenon of complex cancer-related pain that can benefit from an intensive multidisciplinary team approach. However, a delay in differentiating between refractory pain and a more complex syndrome involving both physical and psychosocial distress continues to hinder proper timing of the utilization of a multidisciplinary approach in advanced cancer patients who experience intense nociceptive input with emotional distress with or without a history of substance abuse. Further studies are necessary to help create guidelines on differentiating between refractory cancer pain and complex multidimensional cancer pain. This would then lead to proper timing of applying a multidisciplinary approach, which would lead to avoidance of unnecessary procedures or drug escalations that have adverse effects of their own. Furthermore, our case also demonstrated how an acute palliative care unit can be a powerful tool in the management of complex symptom burden and the importance of continued development and proper utilization of APCUs globally.

CONCLUSION

Patients with advanced cancer are polysymptomatic. These patients require a specialized team and a holistic approach to help them with complex symptom burden. Our patient highlights the importance of a multidisciplinary approach to symptom management in advanced cancer patients with effective use of palliative care units.

DECLARATION OF CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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