PALLIATIVE CARE CASE OF THE MONTH

"Two Tales of TPN: More Complicated than Just Calories"

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Volume 21, No. 119 **October, 2021**

Case 1: Ms. R is 54-year-old woman with appendiceal carcinomatosis and recurrent bowel obstructions following cytoreductive surgery and HIPEC, complicated by the development of an unresectable enterocutaneous fistula, who is now dependent on total parenteral nutrition (TPN). Despite this, her quality of life is excellent, and she is able to maintain all of her daily activities. When her TPN is intermittently discontinued, she feels very lethargic and thus finds little enjoyment in her life. Although she is no longer receiving cancer-directed therapy and is open to the philosophy of hospice, she has determined that her quality of life is much greater on TPN, and she has continued with a more aggressive approach to her care.

Case 2:
Ms. A is a 46-year-old woman with metastatic colorectal cancer with a chronic, contained gastric perforation complicated by multiple intraabdominal abscesses. She has undergone two cytoreductive surgeries, including HIPEC, each followed by recurrence of her disease. She continues to work toward a goal of further surgical resection and receives TPN as a means to that end. Despite several changes in the TPN formulation and timing, however, she suffers from significant nausea and malaise related to the TPN. Although these symptoms have been slightly mitigated by the addition of pantoprazole and an aggressive antiemetic regimen, the only measure that provides effective relief is discontinuation of the TPN. Despite this, she bears the costs of TPN in the hope of achieving her ultimate goal of repeat cytoreductive surgery and subsequent life prolongation.

Discussion: Artificial nutrition and hydration in terminally ill patients reaching the end of life is a controversial topic, fraught with misunderstanding and emotional distress for patients, families, and providers alike.

The syndrome of anorexia-cachexia in advanced cancer is not well understood. It is known that the normal linkage between caloric intake and laying down of new tissue and maintenance of a healthy state is disrupted by means such as catabolic proinflammatory cytokines, hormonal disturbances, muscle proteolysis, and lipid alterations. Because of this disruption, neither enteral nor parenteral nutrition will reverse the profound anorexia and weight loss that often accompanies advanced cancer patients toward the end of life.

Many patients who are experiencing anorexia due to the effects of a terminal illness are not bothered by this symptom. [1-2] When anorexia is bothersome, it can be effectively treated with agents like corticosteroids, Remeron, Olanzapine, or, if considerations of hypercoagulation are considered, an orexigenic agent such as megestrol acetate. [3]

Despite the treatment of anorexia, however, weight loss is an independent symptom that is more difficult to treat. While some studies have shown an increase in fat stores with parenteral nutrition, there is no evidence that lean body mass is increased. [4] Understandably, survival benefit of artificial nutrition in patients with advanced cancer is a large area of interest. The majority of research has not born out any meaningful increase in survival. [5] In fact, some experimental animal studies have shown that parenteral hyperalimentation may cause tumors to grow faster or animals to die sooner, contributing to the so-called phenomenon of "feeding the tumor" [6]. There are no comparable studies in humans. In addition, several studies have shown that parental nutrition may hasten death in critically ill patients due to its direct immunosuppressive effects. These have been born out in clinical studies which show higher risk of infection in patients on TPN than those receiving enteral nutrition. [7]

There are, however, a few scenarios in which artificial nutrition may improve survival. These include patients with a non-functional GI tract (e.g. inoperable malignant bowel obstruction, short bowel syndrome and malabsorption), a lack of symptomatic involvement of critical organs, a relatively indolent course of disease, and a good performance status [8-9].

Importantly, the data regarding the impact of parenteral nutrition on quality of life in advanced cancer patients has also been investigated. In a recent study by Bouleuc et al, no significant improvement was observed when parenteral nutrition was compared to oral feeding in terms of quality of life measures such as pain, nausea, insomnia, dyspnea, fatigue, and performance status. [10] Administration of TPN also brings potential risks and burdens that patients and their caregivers need to understand. It requires regular blood work, the placement of indwelling intravenous lines, as well as the risks of infection, metabolic derangements, and liver and pancreatic dysfunction [11]. Patients or their caregivers need to feel comfortable to safely administer TPN at home. The fact that Ms. A and Ms. R had such clear perceptions on how parenteral nutrition effected their quality of life underscores the fact that there are many complicated layers to the decision to use parenteral nutrition in advanced cancer patients.

Most people have experienced changes in their weight to be directly related to the type and amount of food they consume. Similarly, in the usual role of caregiver, a patient's healthy weight can be interpreted as a sign of success and a tangible result of their love and care. Although we might consider artificial nutrition to be a singular component of complex medical care, we must recognize that feelings of guilt, anger, hopelessness, and failure are often present during these discussions with patients and families.

Discussion Continued

We must be equipped to navigate these with the use of verbal and non-verbal empathy skills. Furthermore, we must come to the table with open minds and the ability to accept and support the path that our patients and their families choose in order to feel fulfilled and comforted in the face of their mortality and bereavement.

Ms. R and Ms. A have vastly different experiences with TPN. Although they both choose to continue the intervention, they do so with very different reasons and goals. Arguably, the most advanced skill of any Palliative Care provider is to use direct and honest communication to help patients and their families discover truths about themselves in the midst of immense grief. We must do this with humility and curiosity and the recognition that comfort care comes in many forms.

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