

Balancing Nutrition Interventions with Patient Goals of Care in Congestive Heart Failure and Malnutrition: Case Report



Texas Christian University | Department of Nutritional Sciences

Lily Norcross BS, Ashley Mullins MS, RD, LD, CNSC

Background

Heart disease is the leading cause of death in the United States.¹ In congestive heart failure (CHF), the heart is unable to pump sufficient blood to meet the body's needs, with characteristic symptoms such as fluid overload, respiratory distress, and fatigue.² About 5-20% of patients with heart failure develop cardiac cachexia, a condition involving severe muscle wasting and potential fat loss that is caused by a combination of chronic inflammation, metabolic dysfunction, intestinal malabsorption, and appetite loss.^{3,4} Cardiac cachexia drastically increases a patient's risk of malnutrition and mortality. Nutrition is an integral component of care for CHF. The primary goals of medical nutrition therapy (MNT) include optimizing the patient's nutritional status, preventing malnutrition, and managing signs and symptoms, which often involves careful macronutrient and micronutrient management.^{2,5,6} Unlike other heart conditions in which fat restriction is typically recommended, fat accumulation is protective in cardiac cachexia, offering increased body mass and metabolic stability.⁴ Despite established guidelines, implementing appropriate nutrition interventions is often multifaceted, particularly in patients with complex clinical needs and care plans. This case report discusses the challenges of balancing nutrition interventions with patient goals of care in a patient with CHF and malnutrition.

Nutritional Considerations

- In patients with CHF and cardiac cachexia, diet liberalization is encouraged, as fat restriction is not recommended and increased intake is a primary goal of care.⁴
- Oral intake is preferred, but nutrition support such as enteral nutrition may be warranted in cardiac cachexia to stop or reverse weight loss.^{4,6,7}

Table 1. Nutrition Guidelines for CHF Management with Cardiac Cachexia

Calories	<ul style="list-style-type: none"> Caloric supplementation is recommended in patients with advanced CHF and unintentional weight loss or cardiac cachexia² Small, frequent meals with energy-dense foods are recommended³
Protein	<ul style="list-style-type: none"> Increased protein requirements in cardiac cachexia due to muscle wasting⁴ General target of 1.0-1.2g protein/kg body weight, but this may be individualized depending on patient needs and nutritional status⁴
Fluid	<ul style="list-style-type: none"> Avoid fluid overload² Restriction of < 2 L fluid/day in patients with severe hyponatremia (serum sodium < 130 mEq/L) and for patients with fluid retention that is difficult to control despite high doses of diuretic and a sodium restriction²
Sodium	<ul style="list-style-type: none"> General recommendation of 2-3 g/day for heart failure to prevent volume overload² Further restriction may be considered in moderate to severe CHF² Restriction of ≤ 1500 mg/day with hypertension²

Case Report

Case Summary

- Patient is a 68-year-old female who presented with CHF exacerbation, dyspnea on exertion, fatigue, and malnutrition.
- Past medical history: CHF, heart failure with reduced ejection fraction, hypertension, non-ischemic cardiomyopathy, paroxysmal atrial fibrillation, and gastroesophageal reflux disease
- Patient has poor prognosis due to advanced heart failure, numerous comorbidities, poor appetite and intake, weight loss, and advanced age.

Assessment

Anthropometrics:

- Height: 4'11" | Admit weight: 92 lb (41.8 kg)
- Usual dry weight: 85-90 lb | BMI: 17.5 (Underweight)
- Ideal body weight (IBW): 95 lb (43.2 kg)
- Weight change: 14.9% loss in one month, suspect partial true weight loss and partial fluid-related losses

Nutrition-focused physical exam (NFPE):

- Moderate muscle loss (temporalis, deltoid, trapezius, quadriceps)
- Moderate fat loss (triceps)
- Mild generalized edema

Pertinent lab values:

- Sodium 132 mEq/L (low), potassium 3.4 mEq/L (low), magnesium 2.5 mEq/L (high)

Medications:

- Diuretics (Lasix, Bumex)
- Potassium chloride
- Antiemetic (Zofran) as needed

- Patient follows healthful diet at home but reports poor appetite and oral intake in the 2 weeks prior to admission. Since admission, patient has had continued poor appetite and intake, eating an average of 50% of her meals.
- Patient meets the criteria for acute severe malnutrition.

Nutrition Diagnosis

Inadequate protein-energy intake related to decreased appetite, as evidenced by oral intake meeting < 75% estimated needs.

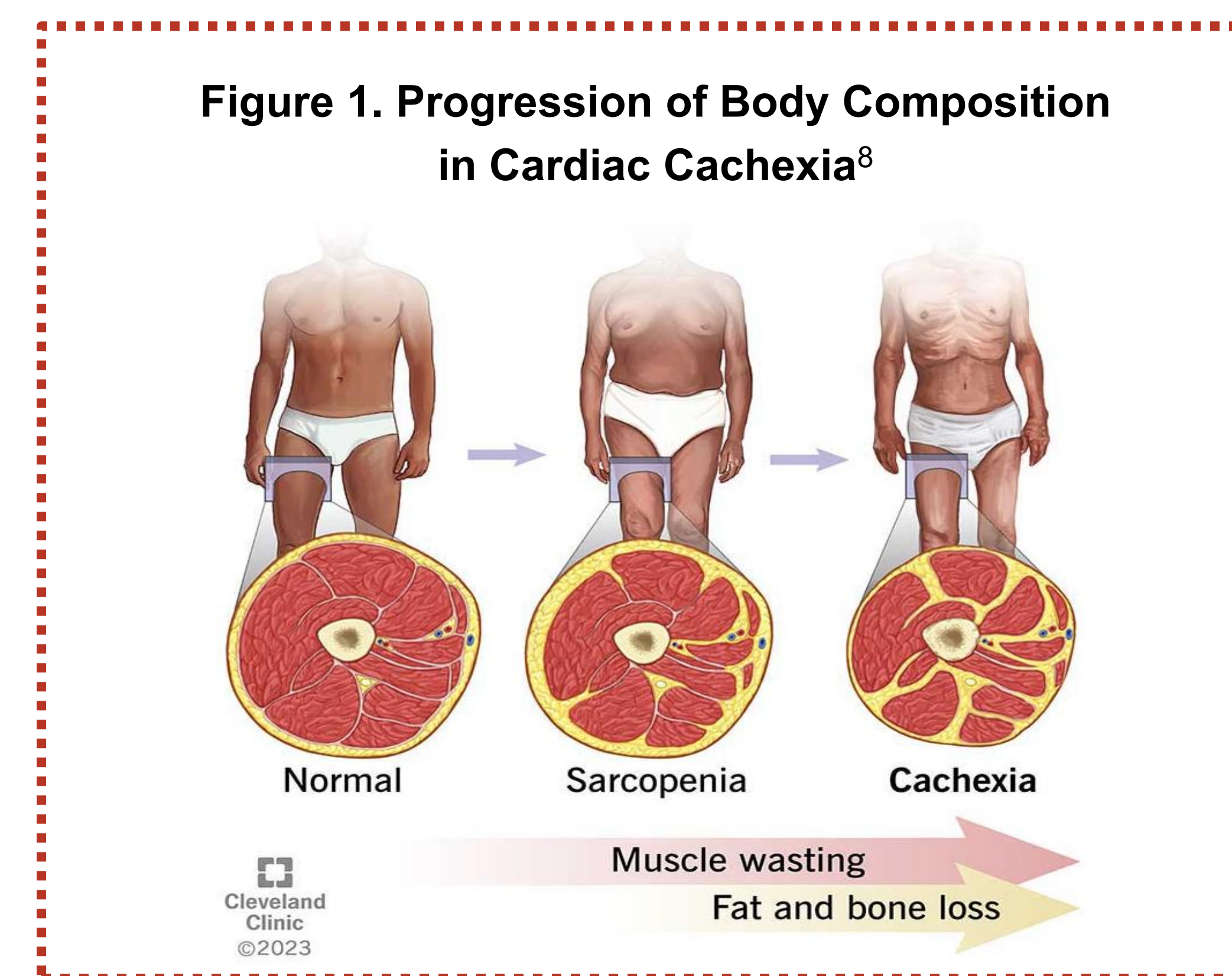
Interventions

The primary goals of nutrition intervention included preventing further weight loss, increasing oral intake, and meeting 75% of the patient's estimated nutritional needs.

- Provided heart-healthy diet education, with an emphasis on energy-dense, nutrient-dense foods to meet energy needs and maintain weight, as well as limiting sodium to manage volume overload and edema
- Liberalized diet order from heart healthy to regular to increase food choices and promote increased oral intake
- Increased calorie and protein needs due to weight loss, low BMI, and malnutrition
 - 1596-1795 kcal (40-45 kcal/kg/day)
 - 52-65g protein (1.2-1.5 g/kg IBW/day)
- Offered oral nutrition supplements to encourage increased calorie and protein intake
- Completed a 3-day calorie count to increase the patient's awareness of her oral intake and justify nutrition support as an option in the patient's care plan
- Plan for percutaneous endoscopic gastrostomy (PEG) tube and enteral nutrition support initiation to supplement oral intake, as the patient was meeting an average of 35% of estimated calorie needs and 30% estimated protein needs per calorie count, but this was not completed

Outcomes

- The patient was initially agreeable to the PEG tube.
- However, she later decided that this was no longer within her goals of care and did not want to initiate nutrition support.
- The patient did not improve her oral intake and discharged home with inotropic support with a primary focus on maintaining comfort and quality of life.



Discussion and Application

- This patient was experiencing many of the characteristic symptoms of CHF, such as fluid overload and fatigue, as well as appetite loss, malnutrition, muscle loss, and fat loss. The MNT was primarily aimed at alleviating the patient's symptoms and improving her nutritional status.
- Diet liberalization was a key intervention for not only promoting increased oral intake but also for supporting the patient's quality of life and enjoyment of eating.
- Initiating nutrition support was appropriate to better meet the patient's nutritional needs. However, the patient's goals of care did not align with the plan for PEG tube placement.
- Patient goals of care and autonomy in decision making are equally as important as practitioners' recommendations. While a practitioner may have a care plan for a patient, there is always a possibility that it may not be executed.
- Educating patients on the relationship between nutrition interventions for CHF, such as prioritizing nutrient-dense foods and monitoring sodium and fluid intake, and their typical outcomes helps patients make informed decisions related to their care.

Conclusion

Optimizing nutritional status in the early stages of CHF is a key factor in preventing malnutrition and the progression of the disease. Implementing the appropriate diet order and MNT can have powerful implications on patient prognosis. However, while evidence-based guidelines may indicate that a particular nutrition intervention is appropriate, the patient's autonomy must be respected. In some instances, patient goals of care will not align with the nutrition plan of care. This patient had complex clinical needs that conflicted with her personal goals of care. Ultimately, maximizing her quality of life became the main goal of both the patient and the interdisciplinary care team.

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