

CASE REPORT

When Less is More: Palliative Decision-Making in a Bedbound Patient with Advanced Illness and Bilateral Pleural Effusions

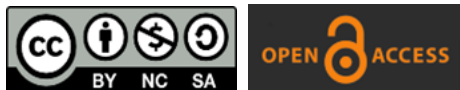
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Abstract

Background: Pleural effusion in advanced illness presents complex challenges in balancing symptom relief with the burden of invasive interventions.

Case presentation: We report a 69-year-old bedbound male with a history of cerebrovascular accident, dementia, type 2 diabetes, hypothyroidism, malnutrition, and prior candidemia, who presented with a one-month history of intermittent non-productive cough. Imaging revealed multifocal pneumonia with large left and moderate right pleural effusions. Despite antibiotic therapy with Vancomycin and Piperacillin-Tazobactam, his overall condition remained poor, with profound malnutrition (BMI 17.5 kg/m²) and limited functional capacity. Pulmonology consultation considered bilateral thoracentesis; however, given his steeply declining health, dementia, and poor nutritional status, the family declined invasive interventions and opted for comfort-focused care. His family changed his code status to Do Not Resuscitate (DNR), and the palliative care team was consulted and provided symptom management, psychosocial support, and hospice transition planning.

Conclusion: This case emphasizes the importance of collaborative decision-making and involvement of palliative care to ensure that management aligns with the patient's goals and overall health. Choosing to avoid invasive procedures and instead focus on comfort care can better reflect the patient's wishes and uphold the principles of autonomy, beneficence, and quality of life.

Keywords: Pleural effusion; Palliative care; Decision-making; Malnutrition; Dementia; Hospice; Comfort care; Cachexia.

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1. Introduction

Pleural effusion affects about 1.5 million people in the United States every year [1]. Pleural effusion can arise from various etiologies, including congestive heart failure, pneumonia, malignancy, systemic inflammatory disorders, and lupus [1]. A delayed diagnosis can be associated with markedly higher morbidity and mortality; the degree of prognostic relevance of a pleural effusion ranges all the way from innocuous to serious [2]. While prognosis varies heavily based on the underlying cause, the condition is a significant indicator of poor short-term and long-term health outcomes [2].

Pleural effusion is a common pulmonary condition that may cause dyspnea, cough, chest discomfort, and reduced functional status [3]. In the setting of malignancy, interventions such as therapeutic thoracentesis, indwelling pleural catheters, pleurodesis, or chest tube drainage are often placed to alleviate symptoms [4]. Guidance emphasizes that the primary aim in such cases is symptom relief, restoration of activity, and avoidance of repeated hospitalization rather than cure [5]. The decision to intervene must carefully weigh the expected benefit versus the burden, particularly in patients with limited life expectancy, poor functional status, or comorbid conditions [6]. Patients with dementia and malnutrition have complex decision-making scenarios; such patients may derive little benefit from invasive procedures, and the focus shifts to comfort, quality of life, and aligning care with goals [7]. Moreover, shared decision-making with patients, when possible, and with surrogate decision-makers, and attention to ethical principles are central to palliative care practice [8]. This case report illustrates one such scenario in which a frail patient with multiple comorbidities and cognitive impairment presented with a pleural effusion, and the palliative care approach guided a care plan consistent with his values and the family's decisions.

2. Case Presentation

A 69-year-old bedbound patient who resides in a nursing home, with a medical history including candidemia, cerebrovascular accident (CVA), hypertension (HTN), hypothyroidism, type 2 diabetes mellitus (T2DM), and dementia, was transferred to the emergency department (ED) from his nursing home because a chest radiograph was concerning for multifocal pneumonia and a large left-sided pleural effusion. He reported a one-month history of non-productive cough but denied chest pain, fever, shortness of breath (from his baseline), or other new symptoms.

On admission, his blood pressure was 147/73 mmHg, pulse 47/min, respiratory rate 22/min, temperature 98.7 °F, and oxygen saturation 98% on room air. Laboratory studies revealed normal white cell counts, hemoglobin 9.6 g/dL, hematocrit 27.9%, platelet count $488 \times 10^9/L$, electrolytes within normal limits, except calcium 7.5 mg/dL, total protein 5.5 g/dL, albumin 2.3 g/dL, glucose 180 mg/dL, and lactate 3.3 mmol/L. Urinalysis was negative for urinary tract infection, stool occult blood was positive, and a respiratory viral panel was negative. Chest X-ray revealed a new large left-sided pleural effusion with persistent multifocal opacities in the right lung; the effusion partially obscured the left lung. Chest computed tomography (CT) confirmed a large left and moderate right pleural effusion (Figures 1 and 2). Chest/abdominal ultrasound showed bilateral pleural effusions (left > right). The patient's body mass index (BMI) was 17.5 kg/m², indicative of significant malnutrition, and his health had been gradually declining since 2021.

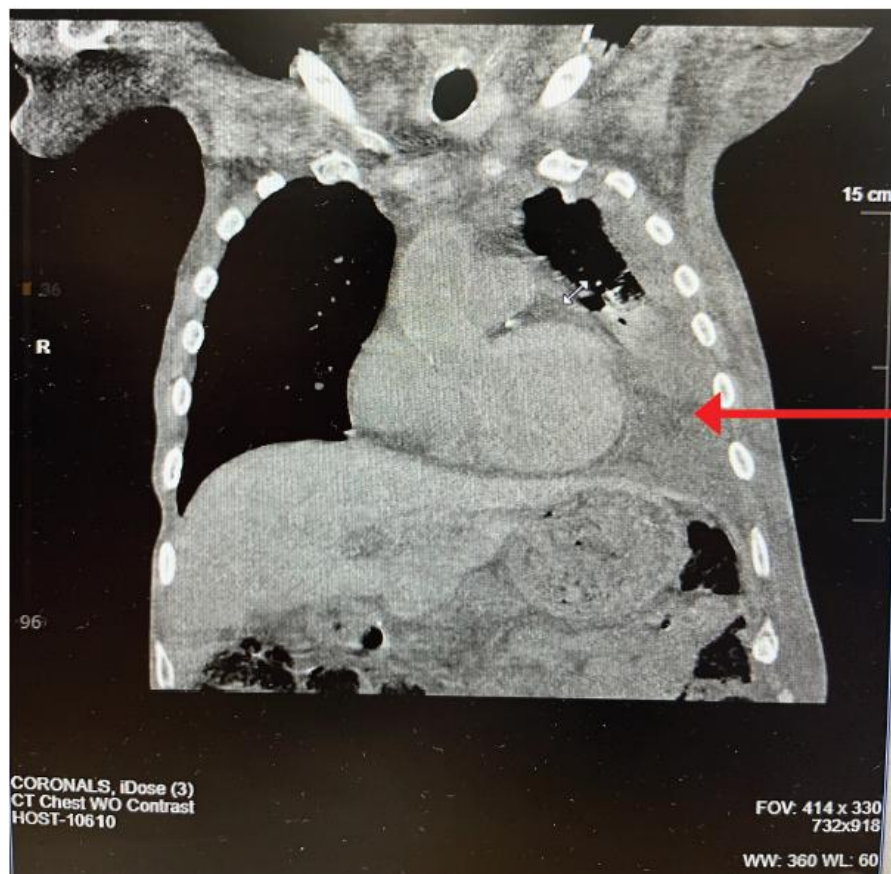


Figure 1. Coronal non-contrast CT chest demonstrating a large left-sided pleural effusion.

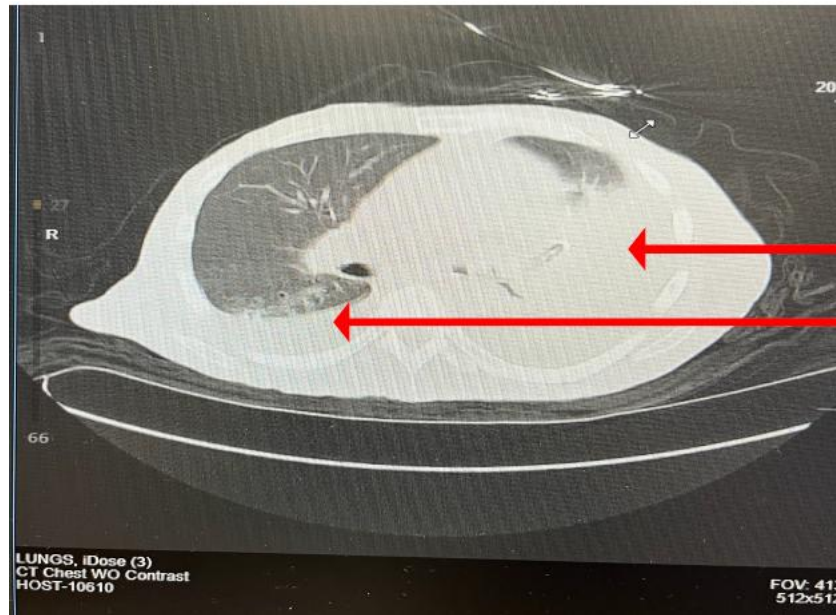


Figure 2. Axial non-contrast CT chest demonstrating a large left-sided pleural effusion and a moderate right-sided pleural effusion.

The pulmonology service evaluated the patient for possible thoracentesis. At that time, the patient was oriented to person and place ($\times 2$) and could answer simple questions and follow commands. He could sit up on the edge of the bed but complained of dizziness rated 8/10 when attempting to stand; he was unable to proceed with standing during physical therapy due to limited strength and dizziness. The family, in discussion with the palliative care team, considered possible thoracentesis or chest-tube drainage but then declined all invasive pleural interventions given the patient's cognitive impairment, malnutrition, comorbidities, and perceived limited potential for functional recovery. The family changed the code status to Do Not Resuscitate (DNR). They requested a palliative-care consult and ultimately elected discharge to a hospice-care facility with the goal of comfort-focused care.

3. Discussion

In this case, we confronted multiple intersecting issues: advanced comorbid illness (dementia, diabetes, prior CVA, candidemia), poor functional stability (very low BMI), malnutrition, cognitive impairment, and pleural effusion in the context of suspected multifocal pneumonia [5,6]. The decision point was whether to pursue invasive pleural interventions, such as thoracentesis or chest tube for drainage of pleural fluid, or focus on comfort and palliative measures [7].

In patients with severe malnutrition and limited functional reserve, the physiological stress associated with surgery or other aggressive interventions often outweighs the potential benefits, increasing the risk of severe complications and prolonged recovery [7]. When pleural effusion becomes a burden in frail patients, the primary goal is symptom relief and that interventions should be calibrated to prognosis, performance status, and patient preferences [6,7]. Simple thoracentesis is recommended for patients with minimal life expectancy, but repeated thoracentesis or more definitive interventions, such as pleurodesis or an indwelling pleural catheter, may not be appropriate in patients with a short prognosis or poor functional status [8,9]. In fact, therapeutic thoracentesis should be reserved for symptomatic patients, and the decision to drain should consider the expected benefit, procedural burden, and the likelihood of fluid recurrence [7,10]. This patient did not have dyspnea or chest pain during the hospital course or at his baseline, and his functional status was poor; thus, the potential benefit of thoracentesis was limited, while the burden and risk might have outweighed the benefits [8,11].

The patient's BMI of 17.5 kg/m² reflects a state of cachexia, which is associated with poor survival and poor recovery potential [8]. Cachexia is a well-recognized issue in advanced dementia and advanced illness more broadly [8,11]. Patients with advanced dementia often have a high symptom burden, but limited evidence base for invasive interventions; palliative care for dementia emphasizes comfort, avoidance of burdensome treatments, and early communication of goals [12,13]. In this context, the team's focus on comfort and hospice rather than intervention was consistent with best-practice palliative care for this population [13,14].

The presence of cognitive impairment (dementia) meant that decision-making rested with the family and surrogate [6,15]. Shared decision-making frameworks emphasize that health care decisions near the end of life should align with the patient's values and goals, involve clear communication of benefits and burdens, support autonomy (via the surrogate if the patient lacks capacity), and address ethical principles of beneficence and non-maleficence [15]. In our case, the family clearly voiced that they believed the risks of invasive procedures would outweigh the benefits and would not meaningfully improve quality of life, thus electing hospice discharge [13]. The patient's and family's goals of care supported avoiding invasive procedures because the risks and burdens outweighed the potential benefits near the end of life [13,15].

By choosing a noninvasive intervention path and focusing on comfort-oriented care, the team respected the ethical pillars of palliative care: autonomy, beneficence, non-maleficence (avoiding burdensome procedures with limited benefit), and justice [15,16]. For patients with limited recovery potential, such as this patient, limited functional reserve, and poor nutritional status, the decision to avoid invasive procedures was ethically sound and aligned with evidence [16,17].

This case highlights several practical points in medicine. Early involvement of palliative care and clear communication of prognosis, functional status, and options are key [18]. Especially in patients with pleural effusion but limited functional reserve and poor prognosis, invasive interventions may not align with goals of care or quality-of-life focus [14,15]. The patient's nutritional status, cognitive impairment, and comorbidities are essential to decision-making [5,19]. It is important to share decision-making with the patient (if capable), family, and surrogate, leading to goal-concordant care, and to keep them informed during the course of treatment [15,19]. Ultimately, patients and their families may decide to transition to hospice when it is appropriate to focus on comfort and quality of life rather than life prolongation via invasive interventions [20].

This is a single-case report and thus may not be generalizable. The lack of detailed follow-up data from the hospice stay (HIPAA) limits the ability to quantify outcomes [21]. Nonetheless, the case contributes to palliative care medicine by illustrating decision-making in a complex patient with pleural effusion, dementia, malnutrition, and declining health status [22].

4. Conclusion

In patients with pleural effusion, limited functional status, cognitive impairment, and malnutrition, the decision to forgo invasive pleural interventions and instead focus on comfort-focused palliative care is both clinically and ethically appropriate. A palliative care approach that prioritizes quality of life, symptom management, shared decision-making, and alignment with patient/family values is essential.

5. Patient Consent

Written informed consent was obtained from the patient or the patient's legally authorized representative for publication of this case report and accompanying images.

6. Contributors

All authors contributed to writing and editing the manuscript, approved the final version, and are responsible for all aspects of the study.

7. Conflicts of Interest

The authors declare no conflicts of interest.

8. Funding

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