Patient: Emilio Williams (* 1952-03-17)
Medical Record Number: SYN117
Admission: 2025-04-03 - 2025-04-14

Discharge Diagnosis: Terminal Respiratory Failure Due to Progressive NSCLC After Multiple Lines of Therapy

1. Detailed Oncological Diagnosis:

Primary Diagnosis: Non-Small Cell Lung Cancer (NSCLC), Adenocarcinoma, Stage IVA
Date of Initial Diagnosis: March 15, 2021

Histology:

- Thoracentesis and pleural biopsy (March 2021) revealed poorly differentiated adenocarcinoma with predominant solid growth pattern.
- Immunohistochemistry: Positive for TTF-1, CK7. Negative for p40, CK20, GATA3.
- Molecular testing: KRAS: G12C mutation positive, EGFR: Wild-type, ALK: No rearrangement, ROS1: No rearrangement, BRAF: Wild-type, MET: No exon 14 skipping mutation, NTRK: No fusion
- PD-L1 expression: <1% Tumor Proportion Score (TPS), CPS 5, IC 2%

Staging:

- TNM (8th edition): cT3N2M1a (Stage IVA)
- Imaging Studies:
    - Chest CT (March 2021): 4.6 cm right lower lobe mass with invasion into visceral pleura, ipsilateral hilar and mediastinal lymphadenopathy, and large right pleural effusion.
    - PET/CT (March 2021): FDG-avid primary mass (SUVmax 14.8), mediastinal lymphadenopathy (stations 4R, 7, 10R), and right pleural effusion/thickening with moderate FDG uptake (SUVmax 6.2).
    - Brain MRI (March 2021): No evidence of brain metastases.

2. History of Oncological Treatment:

First-line Therapy:

- Carboplatin AUC 5 + Pemetrexed 500 mg/m² + Pembrolizumab 200 mg IV every 3 weeks
- Initiated April 6, 2021
- Completed 4 cycles of triplet therapy, followed by maintenance pemetrexed + pembrolizumab
- Disease progression documented January 14, 2022

Second-line Therapy:

- Sotorasib 960 mg PO daily (KRAS G12C inhibitor)
- Initiated February 2022
- Partial response for 5 months

- Disease progression documented July 2022

Third-line Therapy:

- Docetaxel 75 mg/m² + Ramucirumab 10 mg/kg IV every 3 weeks
- Initiated August 2022
- Stable disease for 6 months
- Disease progression documented February 2023

Fourth-line Therapy:

- Gemcitabine 1000 mg/m² days 1 and 8 of 21-day cycle
- Initiated March 2023
- Stable disease for 3 months, then progression
- Discontinued June 2023

Fifth-line Therapy:

- Clinical trial of novel SHP2/KRAS G12C dual inhibitor (Study ID: KR-SHP2-301)
- Initiated July 2023
- Initial stable disease
- Disease progression documented November 2023
- Discontinued from trial December 2023

Palliative Procedures:

- Tunneled pleural catheter placement (March 2021)
- Removed after pleurodesis achieved (August 2021)
- Chemical pleurodesis with talc (August 2021)
- Repeat tunneled pleural catheter (January 2024)

3. Imaging

- CT Chest/Abdomen/Pelvis (February 2025): Progressive disease with enlarging primary tumor mass (now 6.2 cm), increasing pleural thickening, new small pericardial effusion, and increased mediastinal lymphadenopathy.
- Chest X-ray (April 3, 2025, on admission): Large right pleural effusion with complete opacification of right hemithorax, mediastinal shift to left, bilateral interstitial infiltrates.

4. Comorbidities:

- Chronic obstructive pulmonary disease (GOLD stage 3, diagnosed 2014)
- Coronary artery disease s/p MI and PCI (2017)
- Hypertension (diagnosed 2005)
- Type 2 diabetes mellitus (diagnosed 2010)
- Chronic kidney disease stage III (eGFR 45-59)
- Hypothyroidism (diagnosed 2016)
- Peripheral neuropathy (chemotherapy-related)
- History of pulmonary embolism (2022)
- Former smoker (45 pack-year history, quit 2014)

5. Physical Exam at Admission:

General: 73-year-old male in moderate respiratory distress, cachectic appearance.

Vitals: BP 135/78 mmHg, HR 102 bpm, RR 28/min, Temp 37.3°C, SpO2 84% on room air, improved to 92% on 4L O_2 via nasal cannula.

HEENT: Normocephalic, atraumatic. Mild conjunctival pallor. No oral lesions.

Neck: Supple. No cervical or supraclavicular lymphadenopathy. No JVD.

Cardiovascular: Tachycardic, regular rhythm. Normal S1, S2. No murmurs, rubs, or gallops.

Respiratory: Absent breath sounds over right hemithorax. Crackles at left base. Increased work of breathing with accessory muscle use.

Abdomen: Scaphoid, non-tender, non-distended. No hepatosplenomegaly. Normal bowel sounds.

Extremities: 1+ bilateral lower extremity edema. No clubbing or cyanosis.

Skin: Pale, poor skin turgor. No lesions.

Neurological: Alert and oriented x3. Cranial nerves II-XII intact. Motor strength 4/5 throughout, limited by fatigue. Sensation decreased to light touch in stocking distribution bilaterally.

ECOG Performance Status: 3 (deteriorated from 2 over past month)

6. Hospital Course Summary:

Mr. Williams was admitted for management of severe dyspnea and hypoxemia associated with progressive malignant pleural effusion and underlying advanced NSCLC. The patient had exhausted multiple lines of therapy, including immunotherapy, targeted therapy (sotorasib for KRAS G12C mutation), chemotherapy, and clinical trial participation.

On admission, therapeutic thoracentesis removed 1,500 mL of serosanguineous fluid with temporary symptomatic improvement. Pleural fluid cytology confirmed persistent malignant disease. Drainage through existing tunneled pleural catheter was optimized with daily drainage of 250-500 mL.

Despite fluid removal, the patient's respiratory status continued to deteriorate with progressive hypoxemia requiring escalating oxygen support to 6L via nasal cannula. CT chest performed on hospital day 5 showed progression of pleural disease, increasing parenchymal involvement, and lymphangitic spread. Pulmonary function was severely compromised with an estimated FEV1 <30% predicted.

Palliative care was consulted for symptom management, and extensive goals of care discussions were conducted with the patient and family. The patient expressed a desire to focus on comfort measures and quality of life, declining intubation or mechanical ventilation.

A comprehensive multi-disciplinary meeting determined that further anti-cancer therapies would not provide clinical benefit given the patient's deteriorating performance status and history of progression on multiple prior therapies.

Symptom management was optimized with around-the-clock long-acting opioids, breakthrough medication for dyspnea and pain, low-dose benzodiazepines for anxiety, and non-pharmacological interventions. Steroids were initiated for dyspnea palliation.

Patient died on 2025-04-14 with good symptom control.

9. Lab Values (Excerpt):

Parameter	Baseline (3/2021)	Previous Visit (2/2025)	Admission (4/3/2025)	Discharge (4/14/2025)	Units	Reference Range
WBC	8.2	10.8	12.5	13.2	× 10^9/L	4.0-11.0
Hemoglobin	13.8	10.2	9.4	9.2	g/dL	13.5-17.5 (M)
Hematocrit	41.4	30.6	28.2	27.6	%	41.0-53.0 (M)
Platelets	285	256	268	274	× 10^9/L	150-400
Creatinine	1.1	1.5	1.6	1.7	mg/dL	0.7-1.3
eGFR	68	46	43	40	mL/min	>60
BUN	18	28	32	36	mg/dL	7-20
Sodium	138	134	132	133	mmol/L	135-145
Potassium	4.2	4.4	4.6	4.5	mmol/L	3.5-5.0
Chloride	102	96	94	95	mmol/L	98-107
Bicarbonate	25	30	32	31	mmol/L	22-29
Glucose	146	164	172	156	mg/dL	70-100
Albumin	3.8	3.1	2.8	2.7	g/dL	3.5-5.0
Total Protein	7.0	6.2	5.8	5.7	g/dL	6.4-8.2
LDH	248	365	412	425	U/L	125-220
TSH	4.2	2.8	3.1	-	mIU/L	0.4-4.0

Pleural Fluid Analysis (4/3/2025):

- Appearance: Serosanguineous
- RBC: 15,200/mm³
- WBC: 1,250/mm³ (predominantly lymphocytes)
- Protein: 4.8 g/dL
- LDH: 385 U/L
- Glucose: 58 mg/dL
- pH: 7.26
- Cytology: Positive for malignant cells consistent with adenocarcinoma

Arterial Blood Gas (4/3/2025) on 4L O_2:

- pH: 7.36
- pCO2: 48 mmHg
- pO2: 68 mmHg
- HCO3: 31 mEq/L
- O2 Saturation: 92%

Electronically Signed By:
Dr. M. Johnson (Medical Oncology)
Date/Time: 2025-04-14 16:45

Dr. L. Garcia (Pulmonology)
Date/Time: 2025-04-14 14:30

Dr. V. Sharma (Palliative Care)
Date/Time: 2025-04-14 15:20