MEMORIAL MEDICAL CENTER

INTEGRATED DISCHARGE SUMMARY

PATIENT INFO

- **Name:** Oliver Wilson
- **MRN:** SYN019
- **DOB:** 12/22/1954 (70 y/o)
- **Admission Date:** 04/09/2025
- **Discharge Date:** 04/20/2025
- **Service:** Thoracic Oncology
- **Attending Physician:** Dr. Thomas Roberts
- **Primary Care Physician:** Dr. Margaret Peterson
- **Insurance:** Medicare Primary, AARP UnitedHealthcare Secondary

PRINCIPAL DIAGNOSIS: Stage IV RET fusion-positive non-small cell lung cancer (NSCLC)

SECONDARY DIAGNOSES:

1. Pneumothorax (iatrogenic, post-procedure)
2. Pleural effusion (malignant)
3. Hypertension
4. Hyperlipidemia
5. Atrial fibrillation (paroxysmal)
6. Coronary artery disease (s/p CABG 2015)
7. COPD (30 pack-year smoking history, quit 2010)
8. Osteoarthritis (bilateral knees)
9. Gastroesophageal reflux disease
10. History of prostate cancer (s/p radical prostatectomy 2012, no evidence of recurrence)

COMPREHENSIVE ONCOLOGIC HISTORY: Mr. Wilson is a 70-year-old retired electrical engineer with RET fusion-positive NSCLC initially diagnosed in January 2021. His presenting symptoms included persistent non-productive cough, progressive dyspnea on exertion, and unintentional weight loss of 18 pounds over 4 months. He was previously in good health with well-managed cardiac and pulmonary conditions.

Initial CT chest on January 3, 2021, revealed a 3.6cm spiculated left upper lobe mass with ipsilateral hilar lymphadenopathy and satellite nodules. PET/CT on January 10, 2021, confirmed hypermetabolic activity in the primary lesion (SUV 12.4) and hilar nodes (SUV 8.6) and contralateral lung metastases. Brain MRI was negative for intracranial involvement.

CT-guided core biopsy of the lung mass on January 15, 2021, revealed adenocarcinoma with acinar and solid patterns. Immunohistochemistry was positive for TTF-1 and napsin-A, confirming lung origin. Comprehensive molecular testing identified KIF5B-RET fusion without other actionable mutations. PD-L1 expression was low (TPS <1%, CPS 5%).

Given the presence of RET fusion, patient was initiated on selpercatinib 160mg BID on January 28, 2021, with excellent response. First follow-up imaging at 8 weeks showed

approximately 60% reduction in primary tumor size and complete resolution of hilar lymphadenopathy. Patient maintained disease control for 16 months until May 2022, when subtle enlargement of the primary lesion was noted on surveillance imaging.

Repeat biopsy of the progressing tumor on May 20, 2022, confirmed persistent adenocarcinoma with acquired G810S mutation in the RET kinase domain, conferring resistance to selpercatinib. Patient was transitioned to pralsetinib 400mg daily on June 1, 2022, with renewed disease control.

TREATMENT TIMELINE:

- January 2021: Initial diagnosis of RET fusion-positive NSCLC
- January 28, 2021: Initiated selpercatinib 160mg BID
- March 2021 - April 2022: Maintained excellent disease control
- May 2022: Disease progression with acquired G810S mutation
- June 1, 2022: Transitioned to pralsetinib 400mg daily
- June 2022 - Present: Maintained disease control on pralsetinib

TREATMENT-RELATED ADVERSE EVENTS:

- Selpercatinib: Grade 2 hypertension (required addition of amlodipine), Grade 1 QTc prolongation, Grade 1 transaminitis
- Pralsetinib: Grade 2 neutropenia (resolved with brief treatment hold and resumed at full dose), Grade 1 fatigue, Grade 1 dysgeusia

CURRENT HOSPITAL ADMISSION COURSE: Patient was admitted on 04/09/2025 following development of acute dyspnea and right-sided chest pain during routine surveillance bronchoscopy. The procedure was performed to evaluate a new 7mm endobronchial nodule identified on recent CT imaging. During specimen collection, the patient experienced severe coughing spells. Post-procedure chest x-ray revealed moderate left pneumothorax requiring chest tube placement by Interventional Radiology.

During initial evaluation, patient was also found to have a moderate left pleural effusion that had increased since prior imaging two months earlier. Diagnostic and therapeutic thoracentesis was performed on 04/10/2025 with removal of 1.2L serosanguineous fluid. Pleural fluid analysis confirmed exudative effusion by Light's criteria, and cytology was positive for malignant cells consistent with known adenocarcinoma, suggesting pleural progression of disease despite stable appearance of the primary lung lesion.

On hospital day 2 (04/10/2025), patient developed rapid atrial fibrillation with heart rate 140-160 BPM associated with hypotension (BP 90/58). ECG showed no acute ischemic changes. Cardiology was consulted emergently, and rate control was achieved with IV metoprolol. The patient spontaneously converted to normal sinus rhythm within 12 hours. Troponin series was negative for myocardial injury. Echocardiogram showed preserved left ventricular ejection fraction (55-60%) with mild left atrial enlargement and no significant valvular disease.

Metoprolol was continued for rate control and anticoagulation was deferred given recent invasive procedures, active malignancy with pleural involvement, and planned pleural catheter placement. Cardiology recommended outpatient Holter monitoring to assess for paroxysmal atrial fibrillation and consideration of anticoagulation after pleural catheter placement.

Chest tube output gradually decreased, and repeat chest imaging confirmed re-expansion of the left lung with minimal residual pneumothorax. The chest tube was removed on 04/12/2025 without complications. Patient's respiratory status improved significantly with supplemental oxygen requirements decreasing from 4L to 1L NC at rest.

The Thoracic Oncology team assessed the patient's disease status with contrasted CT chest showing stable disease in the primary lesion (now 2.1cm) but development of small volume pleural effusion not present on previous imaging from two months prior. New scattered pleural nodularity was also noted, consistent with pleural metastases. The patient's pralsetinib dose was maintained at 400mg daily throughout hospitalization without interruption.

Given the new finding of malignant pleural effusion with positive cytology, suggesting disease progression despite RET-directed therapy, the oncology team discussed potential therapeutic options including:

1. Continuing current targeted therapy with local management of pleural effusion
2. Consideration of clinical trial participation
3. Transition to chemotherapy
4. Evaluation for novel RET inhibitors with activity against G810S mutation

After multidisciplinary discussion including the patient and family, the decision was made to continue pralsetinib with placement of tunneled pleural catheter for symptom management, while pursuing next-generation sequencing on the pleural fluid specimen to identify potential additional resistance mechanisms that might guide future therapy.

PROCEDURES DURING HOSPITALIZATION:

1. Diagnostic bronchoscopy with endobronchial biopsy (04/09/2025)
    - Findings: 7mm endobronchial nodule in left upper lobe bronchus
    - Histopathology: Adenocarcinoma consistent with known primary
    - Complication: Iatrogenic pneumothorax
2. Chest tube placement by Interventional Radiology (04/09/2025)
    - 12 French pigtail catheter placed in left anterior 5th intercostal space
    - Initial output: 200cc air
    - Connected to underwater seal drainage system at -20cm H2O suction
3. Therapeutic thoracentesis (04/10/2025)
    - Location: Left posterior lateral chest wall, 7th intercostal space
    - Volume: 1.2L serosanguineous fluid
    - Complications: None
    - Symptomatic improvement reported post-procedure
4. Chest tube removal (04/12/2025)
    - Minimal output for 24 hours prior to removal
    - Post-removal chest x-ray: No recurrent pneumothorax

DIAGNOSTIC RESULTS:

Pleural Fluid Analysis (04/10/2025):

- Appearance: Serosanguineous
- RBC: 8,500/μL
- WBC: 1,850/μL with 65% lymphocytes, 30% macrophages, 5% neutrophils

- Protein: 4.2 g/dL (serum: 6.8 g/dL)
- LDH: 225 IU/L (serum: 198 IU/L)
- Glucose: 72 mg/dL
- pH: 7.35
- Cytology: Positive for malignant cells consistent with adenocarcinoma
- Microbiology: No growth on bacterial, fungal, or mycobacterial cultures

Endobronchial Biopsy (04/09/2025):

- Histology: Moderately differentiated adenocarcinoma with acinar pattern
- Immunohistochemistry: TTF-1 positive, Napsin-A positive, consistent with known primary lung adenocarcinoma
- Molecular testing: Pending next-generation sequencing

Laboratory Studies (04/20/2025 - day of discharge):

- Complete Blood Count:
  - WBC: 8.2 K/µL
  - Hgb: 11.8 g/dL
  - Plt: 265 K/µL
  - ANC: 5.8 K/µL
  - ALC: 1.2 K/µL
- Comprehensive Metabolic Panel:
  - Na: 138 mEq/L
  - K: 4.2 mEq/L
  - Cl: 104 mEq/L
  - CO2: 26 mEq/L
  - BUN: 18 mg/dL
  - Cr: 1.1 mg/dL
  - Glucose: 106 mg/dL
  - Ca: 9.2 mg/dL

- AST: 32 U/L Comprehensive Metabolic Panel (continued):
  - ALT: 28 U/L
  - Alk Phos: 86 U/L
  - T. Bili: 0.8 mg/dL
  - Albumin: 3.6 g/dL
- Cardiac Enzymes:
  - Troponin I: <0.04 ng/mL × 3 (negative)
  - BNP: 126 pg/mL (slightly elevated)
- Coagulation Profile:
  - PT: 12.6 seconds
  - INR: 1.1
  - PTT: 32 seconds

IMAGING STUDIES:

CXR (04/09/2025): Moderate left pneumothorax with approximately 35% volume loss. Small left pleural effusion. Left upper lobe mass unchanged from prior studies. Chest tube not yet placed.

CXR (04/10/2025): Re-expansion of left lung with small residual pneumothorax (approximately 10%). Chest tube in good position in the left anterior 5th intercostal space. Decreased pleural effusion following thoracentesis.

CXR (04/12/2025): Complete resolution of pneumothorax. No visible pleural effusion. Chest tube removed.

CT chest with contrast (04/11/2025): Left upper lobe mass stable at 2.1cm compared to study from 02/05/2025. Small loculated pleural effusion along left posterior lateral chest wall. New scattered pleural nodularity suggestive of pleural metastases. No evidence of pulmonary embolism. Chest tube in appropriate position. No pneumothorax. Mediastinal and hilar lymph nodes stable in size.

Echocardiogram (04/10/2025): Left ventricular ejection fraction 55-60%. Normal wall motion and thickness. Mild left atrial enlargement. Trace mitral regurgitation. No pericardial effusion. Right ventricular size and function normal. Estimated pulmonary artery systolic pressure 32 mmHg.

CONSULTATIONS:

1. Interventional Radiology (Dr. Williams): Performed chest tube placement and thoracentesis. Recommended tunneled pleural catheter placement as outpatient for recurrent malignant effusion.
2. Cardiology (Dr. Johnson): Evaluated atrial fibrillation. Recommended rate control with metoprolol, consideration of anticoagulation after pleural catheter placement, and outpatient Holter monitoring.
3. Pulmonology (Dr. Garcia): Evaluated respiratory status. Recommended pulmonary rehabilitation after discharge and supplemental oxygen for exertion.
4. Thoracic Surgery (Dr. Thompson): Evaluated for possible pleurodesis. Recommended tunneled pleural catheter with consideration of talc pleurodesis if lung full expansion achieved.
5. Palliative Care (Dr. Martinez): Consulted for symptom management and goals of care discussion. Patient expressed desire to continue disease-directed therapy while maximizing quality of life. Advance directives reviewed and updated.

DISCHARGE MEDICATIONS:

1. Pralsetinib 400mg PO daily
2. Metoprolol tartrate 50mg PO BID (increased from 25mg BID)
3. Lisinopril 20mg PO daily
4. Atorvastatin 40mg PO daily
5. Tiotropium 18mcg inhaled daily
6. Albuterol/ipratropium nebulizer q6h PRN
7. Pantoprazole 40mg PO daily
8. Oxycodone 5mg PO q6h PRN moderate pain
9. Acetaminophen 650mg PO q6h PRN mild pain
10. Docusate sodium 100mg PO BID
11. Senna 8.6mg PO QHS PRN
12. Aspirin 81mg PO daily (continue after discussion with cardiology regarding anticoagulation)

SUPPLEMENTAL OXYGEN: Patient discharged with portable oxygen concentrator for use with exertion and sleep (1-2L/min nasal cannula). Oxygen saturation goal >92%.

DISCHARGE DISPOSITION: Home with spouse. Patient ambulatory with rolling walker. Oxygen and medical equipment delivered to home prior to discharge.

DISCHARGE PLAN:

1. Outpatient tunneled pleural catheter placement scheduled 04/15/2025 with Interventional Radiology
2. Follow-up with Thoracic Oncology (Dr. Roberts) 04/17/2025
3. Cardiology appointment 04/24/2025 with Dr. Johnson (will include 48-hour Holter monitor placement)
4. Repeat CT chest in 6 weeks (05/25/2025)
5. Continue current targeted therapy with pralsetinib 400mg daily
6. Home health nursing for pleural catheter management after placement (3x weekly initially)
7. Pulmonary rehabilitation referral (to begin after pleural catheter placement)
8. Next-generation sequencing results from pleural fluid expected in 2-3 weeks

ACTIVITY RESTRICTIONS:

1. No heavy lifting (>10 pounds) for 2 weeks
2. No driving while taking oxycodone
3. Shower permitted with plastic covering over pleural catheter site
4. Gradually increase activity as tolerated
5. Use oxygen with exertion to maintain saturation >92%

ONCOLOGIC ASSESSMENT: Mr. Wilson has demonstrated prolonged benefit from RET-directed therapies with initial response to selpercatinib (16 months) followed by continued disease control with pralsetinib after acquired resistance. The development of malignant pleural effusion with positive cytology suggests early disease progression, though the primary tumor remains stable. The identification of pleural metastases on recent imaging further supports evolving resistance to current therapy.

Treatment options discussed with patient and family include:

1. Continue current therapy with pralsetinib with management of pleural effusion via indwelling catheter
    - Advantage: Continued control of primary disease with local management of symptomatic effusion
    - Disadvantage: Limited expected duration of benefit given evidence of progressive resistance
2. Consider clinical trial of novel RET inhibitor with activity against G810S mutation
    - Advantage: Potential to overcome acquired resistance mechanism
    - Disadvantage: Limited availability and uncertain efficacy
3. Consider addition of local therapy (radiation) to primary tumor
    - Advantage: Potential to reduce tumor burden and symptomatic progression
    - Disadvantage: Limited impact on systemic disease control
4. Transition to cytotoxic chemotherapy
    - Advantage: Different mechanism of action may overcome resistance

- Disadvantage: Greater toxicity with uncertain benefit after prolonged targeted therapy

After thorough discussion, patient elected to continue pralsetinib while pursuing management of pleural effusion via tunneled catheter. Pending results of next-generation sequencing will guide consideration of clinical trial options or therapy changes. Patient expressed understanding that current therapy may have limited duration of continued benefit given evidence of progressive disease.

Current overall survival from diagnosis is 51 months, which significantly exceeds median for RET fusion-positive NSCLC. Patient maintains reasonable performance status (ECOG 1-2) despite recent complications and expresses desire to continue disease-directed therapy while prioritizing quality of life.

PROGNOSIS: Given the evidence of progressive disease despite continued RET-directed therapy, prognosis is guarded but not poor. Median survival after progression on second-generation RET inhibitors is approximately 6-12 months based on limited available data. However, the indolent nature of the patient's disease course to date and the availability of additional therapeutic options including clinical trials suggest potential for continued meaningful survival. Goals of care have been discussed extensively, and patient wishes to continue disease-directed therapy while optimizing symptom management.

ADVANCE DIRECTIVES: Patient has completed healthcare power of attorney naming his wife, Eleanor Wilson, as his healthcare agent. He has completed a living will expressing desire for full therapeutic interventions excluding mechanical ventilation exceeding 7 days if no reasonable chance of recovery. Patient has expressed preference for home hospice when disease-directed therapy is no longer beneficial. Documentation scanned into electronic medical record and copied to primary care physician.

FOLLOW-UP APPOINTMENTS:

1. Interventional Radiology: 04/15/2025 at 9:00 AM (tunneled pleural catheter placement)
2. Thoracic Oncology: 04/17/2025 at 11:30 AM
3. Home Health Nursing: First visit scheduled 04/16/2025
4. Pulmonology: 04/24/2025 at 1:00 PM
5. Cardiology: 04/24/2025 at 10:15 AM
6. Palliative Care: 05/01/2025 at 2:00 PM

EMERGENCY PLAN: Patient instructed to contact oncology team for:

1. Fever >100.4°F
2. Worsening shortness of breath
3. Chest pain unrelieved by prescribed medications
4. Palpitations or sensation of irregular heartbeat
5. Dizziness or lightheadedness
6. Issues with pleural catheter after placement

After hours oncology contact number provided: (555) 482-9000

VACCINATIONS: Patient is up to date on influenza and pneumococcal vaccinations. COVID-19 vaccination complete with bivalent booster received 11/2024.

PATIENT EDUCATION:

1. Medication reconciliation completed with patient and spouse
2. Oxygen use and safety reviewed
3. Signs and symptoms requiring medical attention discussed
4. Pleural catheter care instructions to be provided after placement
5. Activity restrictions and gradual return to baseline function reviewed
6. Nutritional counseling provided to optimize protein intake and maintain weight

Prepared by: Robert Chen, MD Thoracic Oncology Fellow Date: 04/20/2025 Time: 14:30

Reviewed and signed by: Thomas Roberts, MD, PhD Attending Physician, Thoracic Oncology Date: 04/20/2025 Time: 16:15

CC: Dr. Margaret Peterson (Primary Care) Dr. Michael Johnson (Cardiology) Dr. Linda Garcia (Pulmonology) Dr. James Williams (Interventional Radiology) Dr. Elena Martinez (Palliative Care)