PACIFIC ONCOLOGY MEDICAL CENTER

DISCHARGE SUMMARY

- **ADMISSION DATE:** 04/02/2025
- **DISCHARGE DATE:** 04/05/2025
- **ATTENDING PHYSICIAN:** Dr. James Thompson

PATIENT INFORMATION

- **NAME:** Olivia Parker
- **DOB:** 09/25/1976
- **MRN:** SYN050

IV non-small cell lung cancer (EGFR Exon 19 deletion) with bone metastases

SECONDARY DIAGNOSES

1. Acute pain crisis due to pathological T7 vertebral fracture
2. Osimertinib-associated QTc prolongation (mild)
3. Iron deficiency anemia
4. Anxiety disorder
5. Gastroesophageal reflux disease

HISTORY OF PRESENT ILLNESS Ms. Parker is a 48-year-old female with EGFR Exon 19 deletion-positive metastatic NSCLC diagnosed in August 2022, currently on first-line osimertinib. She presented to the Emergency Department with acute onset of severe mid-back pain that began after bending to pick up a book. The pain was sharp, rated 9/10, radiating around the thorax, and exacerbated by movement and deep breathing. She denied lower extremity weakness, sensory changes, or bowel/bladder dysfunction but reported progressive worsening of pain over 24 hours despite acetaminophen and her prescribed oxycodone.

Initial evaluation in the ED included thoracic spine imaging which revealed a pathological compression fracture of T7 with 30% height loss and without evidence of spinal cord compression. The patient was admitted for pain management and evaluation for potential vertebral augmentation procedure.

DETAILED ONCOLOGIC HISTORY

Date of Diagnosis: August 8, 2022

Presenting Symptoms: Persistent dry cough, right shoulder pain, and unintentional weight loss of 10 pounds over 2 months.

Diagnostic Procedures:

- **Chest CT (08/01/2022):** 2.7 cm right upper lobe spiculated mass with mediastinal lymphadenopathy.
- **PET/CT (08/04/2022):** Hypermetabolic right upper lobe mass (SUVmax 10.2), hypermetabolic mediastinal lymphadenopathy (stations 4R, 7), and multiple hypermetabolic skeletal lesions (T7, T12, left scapula, right iliac crest).
- **CT-guided lung biopsy (08/06/2022):** Non-small cell lung adenocarcinoma, moderately differentiated.
- **MRI Spine (08/07/2022):** Multiple vertebral metastases involving T7, T12, L3, and L5 without spinal cord compression.
- **Brain MRI (08/07/2022):** Negative for intracranial metastases.

Molecular Testing:

- **EGFR:** Exon 19 deletion (p.E746_A750del) detected
- **ALK, ROS1, BRAF, MET, RET, NTRK:** All negative
- **PD-L1 Expression:** Tumor Proportion Score (TPS) <1% (0%), Combined Positive Score (CPS) 1%, Immune Cell (IC) score 1%
- **Additional Genomic Findings:** TP53 R273H mutation, PIK3CA E545K mutation

Stage at Diagnosis: cT2aN2M1b, Stage IVA

Initial Treatment Plan: First-line osimertinib 80mg daily based on EGFR Exon 19 deletion status.

Treatment Course:

- **Start Date:** August 30, 2022
- **Current Status:** Ongoing treatment with excellent clinical and radiographic response
- **Best Response:** Partial response with 70% reduction in primary tumor and significant improvement in bone metastases
- **Treatment-Related Adverse Events:**
    - Grade 1 paronychia
    - Grade 1 acneiform rash
    - Grade 1 diarrhea
    - Grade 1 QTc prolongation (471 ms on most recent ECG in March 2025)

Radiation Therapy:

- **Stereotactic Body Radiation Therapy (SBRT) to T7 Vertebra (09/12/2022 - 09/16/2022):**
    - 20 Gy in 5 fractions
    - Indication: Pain control and structural stabilization

Prior Oncology-Related Hospitalizations:

- None prior to current admission

PAST MEDICAL HISTORY

1. Iron deficiency anemia (diagnosed 2019)
2. Generalized anxiety disorder (diagnosed 2017)
3. Gastroesophageal reflux disease (diagnosed 2018)
4. Hypothyroidism (diagnosed 2020)
5. Migraines with visual aura (diagnosed 2015)

PAST SURGICAL HISTORY

1. Laparoscopic cholecystectomy (2015)
2. Wisdom teeth extraction (2000)

SOCIAL HISTORY Never-smoker. Works as a high school mathematics teacher (currently on medical leave). Divorced, lives alone. One adult daughter who lives in a neighboring city. No alcohol use. No recreational drug use. Regular yoga practice prior to cancer diagnosis.

FAMILY HISTORY Mother: Breast cancer at age 62 (survivor) Father: Hypertension, type 2 diabetes Maternal aunt: Lung cancer at age 55 (never-smoker) No known family history of genetic syndromes

HOME MEDICATIONS

1. Osimertinib 80mg PO daily
2. Levothyroxine 75mcg PO daily
3. Escitalopram 10mg PO daily
4. Omeprazole 20mg PO daily
5. Ferrous sulfate 325mg PO BID
6. Vitamin D3 2000 IU PO daily
7. Calcium carbonate 600mg PO daily
8. Oxycodone 5mg PO q6h PRN for pain
9. Sumatriptan 50mg PO PRN for migraine
10. Zoledronic acid 4mg IV every 12 weeks (last dose: 03/15/2025)

ALLERGIES Penicillin (urticaria) Sulfa drugs (rash) Contrast dye (nausea)

PHYSICAL EXAMINATION AT ADMISSION

Vital Signs:

- Temperature: 36.9°C
- Heart Rate: 88 bpm
- Blood Pressure: 126/72 mmHg
- Respiratory Rate: 16/min
- SpO_2: 97% on room air

General: Well-nourished, well-developed female in moderate distress due to back pain.

HEENT: Normocephalic, atraumatic. Pupils equal, round, and reactive to light. Extraocular movements intact. Oral mucosa moist without lesions.

Neck: Supple, no lymphadenopathy or thyromegaly.

Cardiovascular: Regular rate and rhythm. Normal S1 and S2. No murmurs, rubs, or gallops.

Respiratory: Clear to auscultation bilaterally. No wheezes, rhonchi, or rales.

Abdominal: Soft, non-tender, non-distended. Normal bowel sounds. No hepatosplenomegaly.

Musculoskeletal: Point tenderness at T7 level of thoracic spine. No paraspinal muscle spasm. Full range of motion in all extremities. Normal muscle tone and strength.

Neurological: Alert and oriented x3. Cranial nerves II-XII intact. Motor strength 5/5 in all extremities. Sensation intact to light touch, temperature, and proprioception. Deep tendon reflexes 2+ and symmetric. Negative Babinski bilaterally. No clonus.

Skin: Mild paronychia affecting several fingernails. Faint maculopapular rash on face and upper chest. No jaundice.

DIAGNOSTIC STUDIES

Laboratory Data (04/02/2025):

Complete Blood Count:

- WBC: 5.6 × 10^9/L (normal)
- Hemoglobin: 10.2 g/dL (low)
- Hematocrit: 30.8% (low)
- MCV: 78 fL (low)
- Platelets: 215 × 10^9/L (normal)

Comprehensive Metabolic Panel:

- Sodium: 138 mmol/L (normal)
- Potassium: 4.2 mmol/L (normal)
- Chloride: 103 mmol/L (normal)
- CO_2: 24 mmol/L (normal)
- BUN: 14 mg/dL (normal)
- Creatinine: 0.8 mg/dL (normal)
- Glucose: 92 mg/dL (normal)
- Calcium: 9.4 mg/dL (normal)
- Albumin: 3.8 g/dL (normal)
- Total protein: 6.9 g/dL (normal)
- AST: 28 U/L (normal)
- ALT: 24 U/L (normal)
- Alkaline phosphatase: 98 U/L (normal)
- Total bilirubin: 0.6 mg/dL (normal)

Additional Studies:

- Iron: 45 µg/dL (low; normal 50-170)
- TIBC: 380 µg/dL (normal; normal 250-450)
- Ferritin: 18 ng/mL (low; normal 20-200)
- TSH: 2.8 µIU/mL (normal)
- Free T4: 1.1 ng/dL (normal)
- Vitamin D, 25-OH: 42 ng/mL (normal)

Coagulation Studies:

- PT: 12.1 seconds (normal)
- INR: 1.0 (normal)
- PTT: 30 seconds (normal)

Electrocardiogram (04/02/2025): Normal sinus rhythm. Rate 76 bpm. QTc interval 471 ms (mildly prolonged). No ST-T wave changes.

Imaging Studies:

Thoracic Spine X-ray (04/02/2025): Compression fracture of T7 vertebral body with approximately 30% height loss. Multiple additional sclerotic lesions throughout the thoracic spine consistent with known metastatic disease.

CT Thoracic Spine (04/02/2025): Acute compression fracture of T7 vertebral body with 30% height loss. No retropulsion of bone fragments into the spinal canal. No evidence of spinal cord compression. Multiple sclerotic lesions throughout visualized spine consistent with treated metastatic disease.

MRI Thoracic Spine (04/03/2025): Acute compression fracture of T7 with marrow edema and enhancement. No epidural extension of tumor. No spinal cord compression or signal abnormality. Multiple additional metastatic lesions throughout the thoracic and upper lumbar spine, predominantly sclerotic in nature, consistent with treatment response.

CT Chest (04/03/2025) (Low-dose, non-contrast): Right upper lobe mass decreased to 0.8 cm (previously 1.1 cm in January 2025). No new pulmonary nodules or masses. No pleural effusion. Compression fracture of T7 vertebra as described on dedicated spine imaging.

HOSPITAL COURSE

Ms. Parker was admitted with acute pain crisis due to a pathological T7 compression fracture at a site of previously irradiated metastatic disease. She was initially managed with IV hydromorphone for pain control, which provided significant relief. Neurosurgery and Interventional Radiology services were consulted for evaluation of potential vertebral augmentation procedures.

MRI confirmed acute compression fracture without spinal cord compression or significant canal compromise. After multidisciplinary discussion, the decision was made to proceed with

kyphoplasty for pain control and structural stabilization. The procedure was performed on 04/04/2025 without complications, resulting in immediate improvement in pain symptoms.

The patient's osimertinib was continued throughout the hospitalization as her recent imaging confirmed ongoing response to therapy. Mild QTc prolongation was noted on ECG (471 ms), but this was stable compared to prior studies and did not require intervention. Iron deficiency anemia was addressed with continuation of oral iron supplementation.

Physical therapy was consulted for gait training and back strengthening exercises. The patient demonstrated good mobility with assistive devices and was deemed safe for discharge home with outpatient physical therapy follow-up.

By discharge, pain was well-controlled on oral medications, and the patient was able to ambulate safely with minimal discomfort.

PROCEDURES

Balloon Kyphoplasty of T7 Vertebra (04/04/2025)

- **Performing Physician:** Dr. Michael Rodriguez, Interventional Radiology
- **Anesthesia:** Moderate sedation
- **Description:** Under fluoroscopic guidance, bilateral transpedicular approach to T7 vertebra was performed. Balloon inflation created adequate vertebral height restoration. Approximately 2.5 cc of polymethylmethacrylate cement was injected into the vertebral body with good fill and no extravasation.
- **Complications:** None
- **Estimated Blood Loss:** Minimal

CONSULTATIONS

1. **Neurosurgery (Dr. Sarah Chen, 04/03/2025):** Assessment: Pathological compression fracture of T7 without neurological compromise. Recommendation: Conservative management appropriate. No surgical indication due to absence of spinal cord compression or instability. Referred to Interventional Radiology for consideration of kyphoplasty.
2. **Interventional Radiology (Dr. Michael Rodriguez, 04/03/2025):** Assessment: Candidate for balloon kyphoplasty for pain control and structural support. Recommendation: Proceed with balloon kyphoplasty of T7 vertebra.
3. **Physical Therapy (Jennifer Williams, PT, 04/05/2025):** Assessment: Independent with bed mobility. Ambulates with front-wheeled walker with modified independence. Pain well-controlled with current regimen. Recommendation: Outpatient physical therapy for progressive back strengthening and gait training. Home exercise program provided.

DISCHARGE MEDICATIONS

1. Osimertinib 80mg PO daily
2. Levothyroxine 75mcg PO daily
3. Escitalopram 10mg PO daily
4. Omeprazole 20mg PO daily
5. Ferrous sulfate 325mg PO BID
6. Vitamin D3 2000 IU PO daily
7. Calcium carbonate 600mg PO daily
8. Oxycodone 5mg PO q6h PRN for moderate pain
9. Oxycodone 10mg PO q6h PRN for severe pain
10. Acetaminophen 650mg PO q6h scheduled for 1 week, then PRN
11. Docusate sodium 100mg PO BID while taking opioid pain medication
12. Senna 8.6mg PO daily PRN constipation
13. Sumatriptan 50mg PO PRN for migraine
14. Zoledronic acid 4mg IV every 12 weeks (next dose due 06/15/2025)

DISCHARGE INSTRUCTIONS

1. Activity: Ambulate with walker as tolerated. No lifting >5 pounds for 2 weeks. No twisting or bending of spine for 2 weeks. May gradually increase activities as tolerated after 2 weeks.
2. Wound Care: Keep kyphoplasty injection sites clean and dry. May remove dressings in 24 hours. No soaking in bath/pool for 7 days.
3. Diet: Regular diet. Increase fiber and fluid intake to prevent constipation.
4. Follow-up: Schedule appointments as listed below.
5. Return to ED for: Severe back pain unrelieved by medication, new neurological symptoms (numbness, weakness, bowel/bladder dysfunction), fever >101°F, or any concerning symptoms.
6. Other: Continue daily home exercise program as instructed by physical therapy.

FOLLOW-UP PLAN

1. Interventional Radiology: Dr. Michael Rodriguez - 04/19/2025 (2 weeks)
2. Medical Oncology: Dr. James Thompson - 04/15/2025 (10 days)
3. Outpatient Physical Therapy: Start 04/12/2025, 2-3 times weekly for 4 weeks
4. Routine labs (CBC, CMP): 04/15/2025 (with oncology appointment)
5. Repeat CT Chest/Abdomen/Pelvis: 07/05/2025 (previously scheduled)
6. Brain MRI: 07/05/2025 (surveillance, previously scheduled)

ONCOLOGIC ASSESSMENT

Ms. Parker has Stage IV EGFR Exon 19 deletion-positive non-small cell lung adenocarcinoma diagnosed in August 2022, with metastatic disease involving multiple skeletal sites. PD-L1 expression is low (TPS <1%, CPS 1%, IC 1%).

She has been receiving first-line osimertinib 80mg daily since August 30, 2022 with excellent disease response. The primary tumor has decreased from 2.7 cm at diagnosis to 0.8 cm on the most recent imaging (70% reduction). Bone metastases have shown sclerotic changes consistent with treatment response.

The current admission for T7 vertebral compression fracture represents a complication of skeletal metastatic disease at a previously irradiated site rather than disease progression. This type of fracture can occur even in the setting of good disease response due to structural weakening of the bone from both tumor infiltration and healing response.

Recent imaging continues to demonstrate ongoing response to osimertinib without evidence of disease progression. The patient has tolerated therapy well with only mild toxicities (paronychia, rash, diarrhea, and mild QTc prolongation). Given her excellent and continued response to therapy, the plan is to continue with current treatment until disease progression or unacceptable toxicity.

The patient is receiving appropriate bone-targeted therapy with zoledronic acid every 12 weeks, which should be continued to reduce the risk of further skeletal-related events.

PROGNOSIS

Ms. Parker has demonstrated a robust and durable response to targeted therapy for her EGFR-mutated NSCLC. Patients with EGFR Exon 19 deletion treated with first-line osimertinib have demonstrated median progression-free survival of approximately 19-24 months in clinical trials, with some patients experiencing significantly longer disease control.

Her current duration of response already exceeds the median PFS reported in clinical trials, suggesting she may be among the subset of patients who achieve extended disease control with targeted therapy. The excellent response in both the primary tumor and metastatic sites is also a favorable prognostic indicator.

The current skeletal-related event (pathological fracture) has been successfully managed without long-term functional impact expected. While bone metastases do represent a negative prognostic factor, the transformation of lytic to sclerotic lesions is consistent with treatment response and improved bone integrity over time.

Overall, her prognosis remains favorable in the intermediate term, with anticipated continued disease control on current therapy. Should resistance to osimertinib eventually develop, molecular testing at that time may reveal actionable resistance mechanisms (such as MET amplification or C797S mutation) for which clinical trials or other targeted approaches may be available.

The 5-year survival rate for patients with stage IV EGFR-mutated NSCLC has improved substantially in the era of targeted therapies, with some series reporting rates of 30-40% or higher. Given her excellent response to therapy, good performance status, limited comorbidities, and absence of progression, Ms. Parker's likelihood of achieving long-term survival is considered good.

DISPOSITION PLANNING

The patient will be discharged home with the following support:

1. Home health nursing for medication management and pain assessment (2 visits per week for 2 weeks)
2. Physical therapy for gait training and back strengthening (2-3 times weekly for 4 weeks)
3. Front-wheeled walker provided for ambulation assistance
4. Thoracolumbosacral orthosis (TLSO) brace for additional support when ambulating outside the home
5. Follow-up appointments scheduled as outlined above

Ms. Parker lives alone but reports her daughter will be staying with her for the first week after discharge. The patient verbalizes understanding of discharge instructions, medication regimen, activity restrictions, and follow-up plan.

Electronically signed by:

James Thompson, MD, PhD
Medical Oncology
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April 5, 2025
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