**Patient**: Melissa Ramos  
**MRN**: 651387  
**DOB**: 1976-05-25 (48 years)  
**Admission**: 2025-03-12 | **Discharge**: 2025-03-21  
**Physicians**: Dr. C. Zhang (Medical Oncology), Dr. B. Patel (Pulmonology), Dr. A. Newman (Cardiology)

**DISCHARGE DIAGNOSIS**

Metastatic HER2-Positive Breast Cancer with Trastuzumab Deruxtecan-Induced Interstitial Lung Disease/Pneumonitis

**DETAILED DIAGNOSIS**

* **Primary**: Metastatic Breast Cancer, HER2-Positive
* **Diagnosed**: 2021-05-10 (early stage); 2023-07-15 (metastatic)
* **Primary tumor characteristics**: Left breast invasive ductal carcinoma, Grade 3, ER-negative, PR-negative, HER2-positive (IHC 3+)
* **Initial stage**: T2N1M0 (Stage IIB)
* **Metastatic sites**: Multiple liver metastases (largest 3.8 cm), bone metastases (spine, ribs, pelvis)
* **Liver biopsy**: Confirmed metastatic breast cancer, ER-negative, PR-negative, HER2-positive

**CURRENT TREATMENT**

**Lung Toxicity Presentation**:

* Progressive dyspnea, dry cough, low-grade fever 2 weeks prior to admission
* HRCT chest: Bilateral ground-glass opacities and septal thickening consistent with drug-induced ILD
* Grading: Grade 3 ILD/pneumonitis (symptomatic, interfering with ADLs, oxygen indicated)
* Pulmonary Function (2025-03-15): FEV1 58%, FVC 62%, DLCO 45% of predicted
* Echocardiogram (2025-03-14): LVEF 55%, normal

**Management of T-DXd-Induced Pneumonitis**:

* Discontinued trastuzumab deruxtecan permanently
* Corticosteroid therapy:
  + Initial: Methylprednisolone 2 mg/kg/day IV (120 mg IV daily) for 3 days
  + Transition: Prednisone 2 mg/kg/day PO (120 mg daily) with planned slow taper over 4-6 weeks
* Supplemental oxygen: 2-3L via nasal cannula to maintain SpO2 >92%
* Empiric antimicrobials initially (discontinued after negative workup):
  + Ceftriaxone 2g IV daily for 5 days
  + Azithromycin 500 mg IV daily for 3 days
* Prophylactic medications:
  + Trimethoprim-sulfamethoxazole DS three times weekly (PCP prophylaxis)
  + Fluconazole 200 mg daily (fungal prophylaxis)

**Supportive Care**:

* Oxygen therapy weaned from 4L to 2L at discharge
* Pulmonary rehabilitation initiated
* Pantoprazole 40 mg PO daily
* Enoxaparin 40 mg SubQ daily during hospitalization

**Oncologic Plan**:

* Hold cancer-directed therapy until complete resolution of pulmonary toxicity
* Plan transition to alternative HER2-directed therapy (tucatinib, trastuzumab, and capecitabine) once pneumonitis resolves

**PREVIOUS TREATMENT HISTORY**

**Localized Disease Treatment** (2021-2022):

* Neoadjuvant: TCHP (Taxotere, carboplatin, Herceptin, Perjeta) × 6 cycles
* Surgery: Left breast lumpectomy with sentinel lymph node biopsy (2021-12-10)
* Adjuvant: Completion of trastuzumab/pertuzumab to 1 year
* Radiation: Left breast 50 Gy in 25 fractions + 10 Gy boost (2022-01 to 2022-03)

**Metastatic Disease Treatment** (2023-2025):

* First-line: Trastuzumab emtansine (T-DM1) from August 2023 until October 2024
* Second-line: Trastuzumab deruxtecan (T-DXd)
  + Started: 2024-11-15
  + Dose: 5.4 mg/kg IV every 3 weeks
  + Cycles completed: 5
  + Best response: Partial response with 30% reduction in liver metastases
  + Last dose: 2025-02-20 (3 weeks before admission)

**COMORBIDITIES**

* Hypothyroidism (diagnosed 2018, well-controlled on levothyroxine)
* Osteopenia (diagnosed 2022, likely related to premature menopause from chemotherapy)
* Chemotherapy-induced peripheral neuropathy (mild residual symptoms)
* Anxiety and depression (diagnosed after cancer recurrence)
* Vitamin D deficiency

**HOSPITAL COURSE**

48-year-old female with metastatic HER2-positive breast cancer presented with progressive dyspnea, dry cough, and low-grade fever. On admission: hypoxemic (SpO2 89% on room air), tachypneic, and tachycardic, requiring 4L oxygen via nasal cannula.

Diagnostic workup: HRCT chest showed diffuse bilateral ground-glass opacities and septal thickening. Bronchoscopy with BAL revealed lymphocytic predominance (45%) without evidence of infection or malignancy. Blood and sputum cultures negative. BNP and echocardiogram normal. CT pulmonary angiogram negative for pulmonary embolism.

Diagnosed with grade 3 trastuzumab deruxtecan-induced ILD/pneumonitis. T-DXd permanently discontinued. Treatment with high-dose steroids led to gradual improvement in respiratory status, with oxygen requirement decreasing from 4L to 2L. Repeat chest X-ray on day 8 showed improvement in bilateral infiltrates.

Medical oncology determined patient cannot be rechallenged with T-DXd due to severity of pulmonary toxicity. Plan to transition to alternative HER2-targeted regimen once pneumonitis resolves and steroid taper completes.

**DISCHARGE MEDICATIONS**

* Prednisone 120 mg PO daily × 1 week, then taper:
  + 100 mg daily × 1 week
  + 80 mg daily × 1 week
  + 60 mg daily × 1 week
  + Further taper to be determined at follow-up
* Trimethoprim-sulfamethoxazole DS 1 tablet PO M/W/F
* Fluconazole 200 mg PO daily
* Pantoprazole 40 mg PO daily
* Levothyroxine 112 mcg PO daily (empty stomach)
* Calcium carbonate 600 mg/Vitamin D 400 IU PO twice daily
* Denosumab 120 mg SC q4w (last: 2025-03-04)
* Escitalopram 10 mg PO daily
* Enoxaparin 40 mg subQ daily (for 4 weeks)
* Acetaminophen 650 mg PO q6h PRN pain/fever
* Ondansetron 8 mg PO q8h PRN nausea

**FOLLOW-UP PLAN**

**Pulmonology**:

* Dr. B. Patel in 1 week (2025-03-28)
* PFTs scheduled for 2025-03-28
* HRCT chest in 4 weeks
* Home pulse oximeter provided for monitoring
* Contact provider if increased oxygen requirements or worsening symptoms

**Medical Oncology**:

* Dr. C. Zhang in 2 weeks (2025-04-04)
* Labs including CBC, CMP, thyroid function tests, tumor markers
* Plan for alternative HER2-targeted therapy after pneumonitis resolution
* Imaging of liver metastases in 6 weeks

**Cardiology**:

* Dr. A. Newman in 4 weeks (2025-04-18)
* TTE prior to appointment
* Clearance for future trastuzumab-based therapy

**Home Care Services**:

* Home oxygen therapy: 2L via nasal cannula PRN to maintain SpO2 >92%
* Home health nursing for respiratory monitoring and medication management
* Physical therapy for pulmonary rehabilitation
* Social work referral

**Patient Education**:

* Steroid taper schedule with medication calendar
* Home glucose monitoring (steroid-induced hyperglycemia)
* Signs requiring immediate medical attention:
  + Worsening shortness of breath
  + Oxygen saturation <92% on prescribed oxygen
  + Fever >38.0°C
  + Severe chest pain
* Infection prevention while immunosuppressed
* Home oxygen equipment use
* Pulmonary rehabilitation exercises

**KEY LAB VALUES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Admission** | **Discharge** | **Reference** |
| WBC | 12.8 | 15.6 | 4.0-11.0 ×10^9/L |
| Neutrophils | 10.2 | 13.8 | 1.8-7.5 ×10^9/L |
| Lymphocytes | 0.9 | 0.8 | 1.0-4.5 ×10^9/L |
| Hemoglobin | 11.2 | 11.0 | 12.0-15.5 g/dL |
| C-reactive protein | 8.2 | 2.4 | <0.5 mg/dL |
| LDH | 310 | 280 | 135-225 U/L |
| Glucose | 142 | 138 | 70-99 mg/dL |

**Microbiology**:

* Blood cultures: No growth after 5 days
* Sputum/BAL cultures: No growth
* Respiratory viral panel (including SARS-CoV-2): Negative
* BAL cell count: 210 cells/μL with lymphocytic predominance (45%)

**Electronically Signed**:  
Dr. C. Zhang (Medical Oncology)  
Dr. B. Patel (Pulmonology)  
Dr. A. Newman (Cardiology)  
Date: 2025-03-21