PACIFIC NORTHWEST ONCOLOGY INSTITUTE Electronic Health Record - Discharge Documentation

Patient Information

Name: Yi Zhu ID: SYN228 Date of Birth: 04/08/1963 Admit Date: 04/02/2025 Discharge Date: 04/14/2025 Length of Stay: 12 days Attending: Dr. Alexandra Lee

Assessment and Plan (Brief Overview)

62yo female with high PD-L1 wild-type NSCLC on pembrolizumab (cycle #41) with exceptional and durable response (37 months) now with Grade 3 immune-related myocarditis and Grade 2 hepatitis requiring permanent discontinuation of immunotherapy.

What happened: Presented with progressive dyspnea, chest discomfort, elevated troponin, and liver enzymes. Echo showed reduced LVEF 40% (baseline 60%). Cardiac MRI and biopsy confirmed immune-mediated myocarditis. Treated with high-dose steroids with significant clinical and laboratory improvement.

On discharge: Symptoms resolved. Cardiac function improved (LVEF 50%). Liver enzymes normalizing. Systemic disease remains in near-complete response.

Follow-up: Cardio-oncology in 1 week, Oncology in 2 weeks. Will not resume immunotherapy due to life-threatening toxicity.

Hospital Course (Detailed)

Ms. SYN228 is a 62-year-old female with stage IVB NSCLC (diagnosed 02/25/2022) with liver and contralateral pulmonary metastases and no actionable mutations but high PD-L1 expression (80% TPS). She has had exceptional response to pembrolizumab monotherapy since 03/18/2022 with >90% reduction in primary tumor and liver metastases, continuing to cycle #41 (last dose 03/22/2025).

Patient presented with 5 days of progressive shortness of breath, chest discomfort, and generalized weakness. Initial evaluation revealed troponin elevation (5.2 ng/mL), ECG changes, and transaminitis.

Cardiac workup included transthoracic echocardiogram showing reduced LVEF (40% from baseline 60%) with global hypokinesis, coronary angiography showing no obstructive disease, and cardiac MRI demonstrating diffuse myocardial edema with non-vascular pattern of late gadolinium enhancement. Endomyocardial biopsy confirmed lymphocytic infiltrate with CD8+ T-cell predominance consistent with immune-mediated myocarditis.

Hepatic evaluation revealed elevated transaminases (ALT 185 U/L, AST 142 U/L) with normal bilirubin and alkaline phosphatase. Other causes of hepatitis were excluded, confirming immune-related etiology.

Treatment consisted of pembrolizumab discontinuation, high-dose methylprednisolone (1000 mg IV daily for 3 days) followed by oral prednisone (1 mg/kg/day) with slow taper plan. Heart failure medications were initiated per cardio-oncology protocol. Telemetry monitoring showed no significant arrhythmias throughout hospitalization.

Clinical response was excellent with troponin trending down, LVEF improving to 50%, and liver enzymes normalizing. No other organ systems showed evidence of immune-related toxicity.

A formal case review was conducted on April 10, 2025, with medical oncology, cardiology, and cardio-oncology specialists. Given the severity of myocarditis (Grade 3) and excellent prior response, the consensus recommendation was permanent discontinuation of pembrolizumab with close surveillance.

Laboratory Data

Test	On Admission	Peak/ Nadir	Discharge	Reference Range
Troponin I	5.2	8.4	0.8	<0.04 ng/mL
CK-MB	36	48	12	0-7 ng/mL
BNP	865	1100	350	<100 pg/mL
ALT	148	185	65	7-56 U/L
AST	122	142	48	8-48 U/L
Alk Phos	115	115	96	45-115 U/L

Test	On Admission	Peak/ Nadir	Discharge	Reference Range
T. Bili	1.2	1.2	0.8	0.2-1.2 mg/dL

Diagnostic Studies

1. Echocardiogram (04/02/2025):
    - LVEF 40% (decreased from 65% baseline)
    - Global hypokinesis
    - Small pericardial effusion
2. Cardiac MRI (04/04/2025):
    - Diffuse myocardial edema on T2-weighted images
    - Patchy late gadolinium enhancement in non-vascular distribution
    - Findings consistent with myocarditis
3. Endomyocardial biopsy (04/05/2025):
    - Lymphocytic infiltrate with CD8+ predominance
    - Scattered eosinophils
    - Myocyte necrosis
    - Consistent with immune-mediated myocarditis
4. Repeat Echocardiogram (04/12/2025):
    - LVEF improved to 50%
    - Mild global hypokinesis
    - Stable small pericardial effusion

Discharge Medications

1. Prednisone 60 mg PO daily × 2 weeks, then taper by 10 mg every week
2. Metoprolol succinate 25 mg PO daily
3. Lisinopril 2.5 mg PO daily
4. Famotidine 20 mg PO BID
5. Levothyroxine 112 mcg PO daily (home medication for prior immune-related hypothyroidism)
6. Calcium/Vitamin D supplementation

Follow-up Appointments

1. Cardio-oncology: April 21, 2025 (1 week)
2. Medical oncology: April 28, 2025 (2 weeks)

3. Cardiology: May 12, 2025 (4 weeks)
4. Lab monitoring: Weekly troponin, BNP, CMP × 4 weeks
5. Imaging: Repeat echocardiogram in 2 weeks, CT chest/abdomen/pelvis in 8 weeks

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Special Instructions

1. Report immediately:
    - Worsening shortness of breath
    - Chest pain or pressure
    - Irregular heartbeat or palpitations
    - Dizziness or lightheadedness
    - Weight gain >2 kg in 3 days
2. Activity restrictions:
    - No heavy lifting (>10 pounds) for 2 weeks
    - No strenuous exercise until cardiology clearance
    - Maintain light physical activity as tolerated
    - Daily weight monitoring
3. Medication precautions:
    - Follow steroid taper exactly as prescribed
    - Take all heart medications at the same time daily
    - Avoid NSAIDs and decongestants

Condition at Discharge

Stable with significant improvement in symptoms. Able to ambulate without dyspnea. No chest pain. Oxygen saturation 98% on room air. Vitals stable. LVEF improved to 50%. Liver enzymes normalizing. ECOG performance status 1 (baseline 0).

Adverse Event Reporting

This case has been submitted to the FDA Adverse Event Reporting System (FAERS) and added to the Immune-Related Adverse Events (irAE) Registry for long-term follow-up.

Alexandra Lee, MD, PhD Medical Oncology April 14, 2025 16:45