**Patient**: E.P. (DOB 1956-05-15)  
**MRN**: 629384  
**Admission**: 2025-03-16 | **Discharge**: 2025-03-27  
**Physicians**: Dr. A. Nguyen (Medical Oncology), Dr. S. Goldstein (Hepatology), Dr. R. Martinez (Gastroenterology)

**DISCHARGE DIAGNOSIS**

Pembrolizumab-induced Autoimmune Hepatitis in Patient with Stage IV NSCLC

**ONCOLOGICAL DIAGNOSIS**

* **Primary**: Non-Small Cell Lung Cancer (NSCLC), Adenocarcinoma, Stage IVB
* **Diagnosed**: October 2024
* **Histology**:
  + CT-guided biopsy: Poorly differentiated adenocarcinoma
  + IHC: TTF-1+, CK7+, Napsin A+, CK20-, p40-, synaptophysin-
  + Molecular: KRAS G12C mutation+, EGFR/ALK/ROS1/BRAF/MET/RET negative
  + PD-L1 expression: 80% TPS
* **Staging**:
  + TNM (8th): cT3N2M1c (Stage IVB)
  + CT Chest: 5.2 cm RUL spiculated mass with lymphadenopathy
  + PET/CT: FDG-avid primary mass (SUVmax 15.2), lymphadenopathy, multiple bone metastases, bilateral adrenal involvement
  + Brain MRI: Negative for metastases

**TREATMENT HISTORY**

* **Immunotherapy**:
  + Pembrolizumab 200 mg IV q3wks (3 cycles: Dec 2024, Jan 2025, Feb 2025)
* **Palliative RT**:
  + 30 Gy in 10 fractions to T10-L1 vertebral metastases (Jan 2025)
* **Supportive**:
  + Zoledronic acid 4 mg IV q4wks (initiated Dec 2024, last dose Feb 2, 2025, current cycle held)
* **Response**:
  + CT (Feb 2025): Partial response with 30% reduction in primary lesion and lymphadenopathy; stable bone and adrenal metastases

**COMORBIDITIES**

* COPD (GOLD stage 2, 2018)
* Rheumatoid arthritis (2010, in remission on hydroxychloroquine)
* Osteoporosis (2019, previously on denosumab)
* Hypothyroidism (controlled on levothyroxine)
* Pulmonary embolism (Sept 2024, on apixaban)
* Former smoker (60 pack-years, quit 2018)
* Anxiety disorder
* Allergies: Penicillin (urticaria), Sulfa drugs (rash)

**HOSPITAL COURSE**

68-year-old female admitted for asymptomatic grade 3 hepatotoxicity detected on routine labs prior to scheduled 4th cycle of pembrolizumab. Temporal relationship to immunotherapy strongly suggested immune-related hepatitis.

Diagnostic evaluation excluded other causes of liver injury:

* Viral hepatitis panel (HAV, HBV, HCV): Negative
* Autoimmune serologies: Mildly positive ANA (1:160) and ASMA (1:40)
* Abdominal ultrasound: Normal liver, no biliary dilation/obstruction
* MRCP: No biliary disease
* CT abdomen: No liver metastases or hepatic pathology
* Liver biopsy: Interface hepatitis with lymphocytic infiltrate and scattered plasma cells, compatible with autoimmune hepatitis consistent with pembrolizumab-induced irAE

Treatment initiated with IV methylprednisolone (2 mg/kg/day), with gradual improvement in liver enzymes (60% decrease from peak by day 10), allowing transition to oral prednisone (60 mg daily).

The patient developed steroid-induced hyperglycemia with glucose levels ranging from 140-210 mg/dL, necessitating sliding scale insulin coverage and diabetic education. She also experienced mild insomnia managed with sleep hygiene measures rather than pharmacologic intervention. No evidence of other immune-related adverse events was detected during admission; specifically, thyroid function tests remained normal, and there were no signs of colitis, pneumonitis, nephritis, or endocrinopathies.

Multidisciplinary decision (oncology, hepatology, gastroenterology): Permanently discontinue pembrolizumab due to grade 3 immune-related hepatitis. Alternative options (sotorasib, chemotherapy) discussed for future treatment once hepatitis resolves.

Hepatology recommended slow prednisone taper over 6-8 weeks with close LFT monitoring. PCP prophylaxis initiated (changed to atovaquone due to sulfa allergy).

Patient remained clinically stable without symptoms of liver dysfunction, with continuing improvement in LFTs at discharge.

**DISCHARGE MEDICATIONS**

**New Medications**:

* Prednisone 60 mg PO daily for 2 weeks, then taper by 10 mg weekly
* Atovaquone 1500 mg PO daily (PCP prophylaxis)
* Calcium carbonate 600 mg + Vitamin D 400 IU PO BID
* Pantoprazole 40 mg PO daily
* Insulin sliding scale PRN for steroid-induced hyperglycemia:
  + Lispro: 0 units if BG <150, 2 units if 151-200, 4 units if 201-250, 6 units if 251-300, 8 units if 301-350, 10 units if >350 + call provider
  + Check BG QID (before meals and bedtime)

**Continued Home Medications**:

* Apixaban 5 mg PO BID
* Levothyroxine 88 mcg PO daily
* Hydroxychloroquine 200 mg PO daily
* Tiotropium bromide inhaler 1 inhalation daily
* Albuterol inhaler 2 puffs Q4H PRN
* Fluticasone/vilanterol inhaler 1 inhalation daily
* Escitalopram 10 mg PO daily

**Discontinued Medications**:

* Temporarily: Zoledronic acid (resume per oncology)
* Permanently: Pembrolizumab

**FOLLOW-UP PLAN**

**Oncology**:

* Dr. A. Nguyen in 1 week (April 3, 2025) to discuss next treatment options:
  + Sotorasib (KRAS G12C inhibitor)
  + Platinum-based chemotherapy
  + Clinical trial options

**Hepatology**:

* Dr. S. Goldstein in 2 weeks (April 10, 2025)
* LFTs twice weekly for first 2 weeks, then weekly until normalized
* Monitor for rebound hepatitis during steroid taper

**Laboratory Monitoring**:

* CBC, CMP (including LFTs), fasting glucose weekly while on high-dose steroids
* Home BG monitoring QID while on insulin sliding scale
* TSH in 4 weeks (monitor for immune-related thyroiditis)
* Consider repeat autoimmune serologies (ANA, ASMA) after steroid taper to assess baseline status

**Imaging**:

* CT Chest/Abdomen/Pelvis scheduled for April 15, 2025
* Consider MRI liver with contrast if LFTs fail to improve or worsen during steroid taper

**Patient Education Provided**:

* Immune-related hepatitis explanation and treatment plan
* Steroid taper importance and side effect management
* Specific warning regarding abrupt steroid discontinuation and risk of adrenal insufficiency
* Insulin sliding scale management with hypoglycemia recognition and treatment
* Potential other immune-related toxicities to monitor: diarrhea/colitis, skin rash, endocrinopathies (thyroid dysfunction, adrenal insufficiency), pneumonitis
* Avoid hepatotoxic medications/substances including acetaminophen >2g/day, NSAIDs, alcohol, and certain herbal supplements

**KEY LAB VALUES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Baseline** | **Pre-admission** | **Peak** | **Discharge** | **Reference** |
| ALT | 25 | 865 | 968 | 342 | 7-56 U/L |
| AST | 22 | 723 | 824 | 255 | 8-48 U/L |
| Alk Phos | 85 | 246 | 278 | 182 | 45-115 U/L |
| Total Bili | 0.6 | 1.6 | 2.2 | 1.3 | 0.2-1.2 mg/dL |
| Direct Bili | 0.2 | 0.8 | 1.0 | 0.5 | 0.0-0.3 mg/dL |
| INR | 1.0 | 1.2 | 1.3 | 1.1 | 0.9-1.1 |
| Glucose | 106 | 115 | 210 | 185 | 70-100 mg/dL |
| ANA | - | - | 1:160 | - | <1:40 |
| ASMA | - | - | 1:40 | - | <1:40 |

**Electronically Signed**:  
Dr. A. Nguyen (Medical Oncology)  
Dr. S. Goldstein (Hepatology)  
Dr. R. Martinez (Gastroenterology)  
Date: 2025-03-27