**Patient:** Thomas Nguyen (DOB: 1962-04-18)  
**Medical Record Number:** 629471  
**Date of Admission:** 2025-03-25  
**Date of Discharge:** 2025-04-01  
**Admitting Physician:** Dr. R. Patel (Medical Oncology)  
**Consulting Physician:** Dr. L. Matthews (Interventional Radiology), Dr. S. Wilson (Pulmonology)

**Discharge Diagnosis: Hepatocellular Carcinoma, Stage IIIA (BCLC-B), on bevacizumab/atezolizumab therapy, with acute bilateral pulmonary emboli**

**1. Detailed Oncological Diagnosis:**

Primary Diagnosis: Hepatocellular Carcinoma (HCC)  
Date of Initial Diagnosis: 2024-10-08

Histology:

* Ultrasound-guided core needle biopsy of segment V liver mass (2024-10-05)
* Moderately differentiated (G2) hepatocellular carcinoma
* Immunohistochemistry: Hepatocyte-specific antigen+, Glypican-3+, Arginase-1+, CK7-, CK20-

Molecular Testing:

* Next-generation sequencing: TERT promoter mutation, CTNNB1 mutation, TP53 mutation (R249S)
* No actionable mutations identified for targeted therapy

Initial Staging:

* American Joint Committee on Cancer (AJCC 8th Ed.): cT3N0M0, Stage IIIA
* Barcelona Clinic Liver Cancer (BCLC) stage: Stage B (intermediate)
* Performance Status: ECOG 1

Etiology and Risk Factors:

* Chronic hepatitis B infection (diagnosed 2010)
* Cirrhosis (Child-Pugh A5)
* No history of alcohol abuse
* MELD score: 9

Imaging:

* Contrast-enhanced CT Abdomen (2025-03-15): Dominant mass in right hepatic lobe (segment V), measuring 6.8 × 5.7 cm with satellite lesions in segments VI and VIII (1.2 cm and 2.3 cm, respectively). No invasion of major vascular structures. Multiple enhancing lesions consistent with intrahepatic metastases. No ascites. Splenomegaly.
* CT Chest (2025-03-15): No evidence of lung metastases. No pulmonary emboli visible at that time.
* MRI Abdomen with liver protocol (2025-03-18): Confirms findings from CT. Lesions demonstrate arterial phase hyperenhancement and delayed phase washout, characteristic of HCC. Patency of portal vein and hepatic veins. Liver contour nodular, consistent with cirrhosis.

AFP Trend:

* At diagnosis (2024-10): 3,450 ng/mL
* Pre-treatment (2024-11): 4,200 ng/mL
* After 2 cycles (2025-01): 1,850 ng/mL
* After 4 cycles (2025-03): 1,100 ng/mL

**2. Current Treatment:**

* CT Pulmonary Angiogram (2025-03-25): Bilateral pulmonary emboli involving the right main pulmonary artery extending into the upper and lower lobe branches, and left lower lobe segmental arteries. No evidence of right heart strain.
* Treatment:
  + therapeutic enoxaparin (1 mg/kg SubQ BID) for 7 days
  + transitioned to apixaban 5 mg PO BID

**3. History of Oncological Treatment:**

Prior Treatments:

* Transarterial chemoembolization (TACE) × 2 sessions (2024-10-22 and 2024-11-15) to dominant lesion in segment V
* Partial response after TACE by mRECIST criteria
* Decision for systemic therapy due to multifocal disease progression

Systemic Therapy:

* Atezolizumab 1200 mg IV + Bevacizumab 15 mg/kg IV
* Cycle 1: 2024-12-10
* Cycle 2: 2024-12-31
* Cycle 3: 2025-01-21
* Cycle 4: 2025-02-11
* Cycle 5: 2025-03-18

Toxicities Prior to Current Admission:

* Grade 2 fatigue (ongoing)
* Grade 1 infusion reaction with cycle 1 (resolved)
* Grade 2 hypertension (controlled with medication)
* Grade 2 proteinuria (cycle 3 onward)
* Grade 1 hypothyroidism (started on levothyroxine after cycle 3)
* Grade 1 transaminitis (intermittent)

**4. Secondary Illnesses (Comorbidities):**

* Chronic hepatitis B (on entecavir 0.5 mg daily since 2012)
* Compensated cirrhosis (Child-Pugh A5)
* Hypertension (diagnosed 2019)
* Type 2 diabetes mellitus (diagnosed 2020)
* Esophageal varices (small, no history of bleeding)
* Hyperlipidemia

**5. Physical Exam at Admission:**

General: 62-year-old Asian male, alert and oriented, appearing mildly uncomfortable with shortness of breath.

Vitals: BP 148/92 mmHg, HR 104 bpm, RR 24/min, Temp 37.2°C, SpO2 92% on room air (improved to 96% on 2L NC), Weight 82 kg, Height 175 cm.

HEENT: Normocephalic, atraumatic. Sclera anicteric. Mucous membranes moist.

Neck: Supple, JVP not elevated, no lymphadenopathy.

Cardiovascular: Tachycardic but regular rhythm, normal S1/S2, no murmurs, rubs, or gallops.

Respiratory: Tachypneic, decreased breath sounds at bilateral bases, no wheezes or crackles.

Abdomen: Nontender. Liver edge palpable 3 cm below costal margin, firm. Spleen tip palpable. Shifting dullness present.

Musculoskeletal: No clubbing, cyanosis, or edema.

Neurological: Alert and oriented x3. Cranial nerves II-XII intact. Motor strength 5/5 in all extremities. Sensory intact. Reflexes 2+ throughout.

Skin: Warm, dry, mild palmar erythema. Spider angiomata noted on anterior chest. No jaundice.

Lymphatics: No palpable cervical, axillary, or inguinal lymphadenopathy.

**6. Epicrisis (Hospital Course Summary):**

Mr. Nguyen is a 62-year-old male with hepatitis B-related cirrhosis and Stage IIIA hepatocellular carcinoma on atezolizumab/bevacizumab immunotherapy who presented with acute onset dyspnea, pleuritic chest pain, and tachycardia. He received cycle 5 of treatment 7 days prior to admission.

On presentation, the patient was tachycardic and tachypneic with oxygen saturation of 92% on room air. D-dimer was elevated at 3.8 mg/L (normal <0.5). CT pulmonary angiogram confirmed bilateral pulmonary emboli involving the right main pulmonary artery and left lower lobe segmental arteries. Echocardiogram showed preserved left ventricular function (EF 55%) with mild right ventricular dilation but normal function, consistent with submassive pulmonary embolism. Lower extremity Doppler ultrasound demonstrated an occlusive deep vein thrombosis in the left popliteal vein.

The patient was initially started on therapeutic enoxaparin (1 mg/kg SubQ BID). Pulmonology was consulted and recommended against thrombolytic therapy given the absence of hemodynamic compromise and the patient's underlying cirrhosis with associated bleeding risk. Interventional radiology was consulted and determined the patient was not a candidate for catheter-directed therapy.

Throughout the hospitalization, the patient remained hemodynamically stable with improvement in oxygen requirements to room air by day 5. Serial liver function tests remained at baseline, and renal function was stable. Oncology recommended discontinuation of bevacizumab due to the thromboembolic event, with plans to continue atezolizumab as monotherapy after stabilization.

A hypercoagulability evaluation was initiated but is still pending. The etiology of the pulmonary embolism is likely multifactorial, related to:

1. Malignancy-associated hypercoagulability
2. Bevacizumab therapy, which is known to increase thromboembolic risk
3. Underlying cirrhosis (which can cause both hypo- and hypercoagulable states)

After seven days of therapeutic anticoagulation, the patient was transitioned to apixaban 5 mg BID for long-term management. The decision to use a direct oral anticoagulant (DOAC) rather than continuing LMWH was made given the patient's stable liver function, patient preference, and emerging data supporting DOAC use in selected patients with compensated cirrhosis.

The patient received extensive education on signs and symptoms of bleeding, thromboembolic events, and medication management. He demonstrated understanding and was deemed safe for discharge with close follow-up.

**7. Medication at Discharge:**

* Apixaban 5 mg PO BID (indefinite duration, minimum 6 months)
* Entecavir 0.5 mg PO daily (for chronic hepatitis B)
* Lisinopril 10 mg PO daily (for hypertension)
* Metformin 1000 mg PO BID (for diabetes)
* Atorvastatin 20 mg PO daily (for hyperlipidemia)
* Levothyroxine 50 mcg PO daily (for immune-related hypothyroidism)
* Acetaminophen 500 mg PO Q6H PRN pain/fever (max 2 g/day)
* Pantoprazole 40 mg PO daily

Medications Held/Discontinued:

* Bevacizumab (permanently discontinued due to PE)
* Atezolizumab (temporarily held, plan to resume as monotherapy in 2-4 weeks)

**8. Further Procedure / Follow-up:**

Medical Oncology Follow-up:

* Appointment with Dr. R. Patel in 1 week (2025-04-08)
* Plan to resume atezolizumab monotherapy in 2-4 weeks (approximately 2025-04-15 to 2025-04-29)
* Discuss switch to durvalumab/tremelimumab

Pulmonology Follow-up:

* Appointment with Dr. S. Wilson in 2 weeks (2025-04-15)
* Follow-up CT pulmonary angiogram in 3 months to assess resolution

Hepatology Follow-up:

* Appointment with Dr. C. Ramirez in 2 weeks (2025-04-15)
* Surveillance endoscopy in 3 months for varices assessment

Laboratory Monitoring:

* CBC, CMP, PT/INR, AFP weekly for the first month, then every 3 weeks
* TSH, fT4 every 6 weeks while on immunotherapy
* Urinalysis for proteinuria monthly
* HBV viral load every 3 months while on immunotherapy

Imaging:

* CT chest/abdomen/pelvis with contrast in 6 weeks (2025-05-15) to assess treatment response
* Liver ultrasound with Doppler every 6 months for cirrhosis surveillance

Patient Education:

* Signs and symptoms of recurrent VTE (shortness of breath, chest pain, leg swelling)
* Bleeding precautions while on anticoagulation
* Signs of hepatic decompensation (increasing ascites, confusion, jaundice)
* Immune-related adverse events monitoring
* Instructions to contact oncology clinic for any new or worsening symptoms

**9. Lab Values (Excerpt):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Admission (2025-03-25)** | **Discharge (2025-04-01)** | **Units** | **Reference Range** |
| WBC | 5.8 | 6.2 | x10^9/L | 4.0-11.0 |
| Hemoglobin | 12.3 | 11.8 | g/dL | 13.5-17.5 (M) |
| Platelets | 105 | 110 | x10^9/L | 150-400 |
| INR | 1.3 | 1.2 | - | 0.8-1.2 |
| PTT | 36.5 | 35.2 | seconds | 25-35 |
| Creatinine | 1.1 | 1.0 | mg/dL | 0.7-1.3 |
| eGFR | 72 | 75 | mL/min/1.73m² | >90 |
| BUN | 22 | 18 | mg/dL | 7-20 |
| AST | 65 | 58 | U/L | 10-40 |
| ALT | 48 | 45 | U/L | 7-56 |
| Alk Phos | 145 | 140 | U/L | 45-115 |
| Total Bilirubin | 1.8 | 1.7 | mg/dL | 0.1-1.2 |
| Direct Bilirubin | 0.8 | 0.7 | mg/dL | <0.3 |
| Albumin | 3.2 | 3.3 | g/dL | 3.5-5.2 |
| Sodium | 136 | 138 | mmol/L | 135-145 |
| Potassium | 4.3 | 4.1 | mmol/L | 3.5-5.1 |
| Glucose | 165 | 140 | mg/dL | 70-99 |
| AFP | 1100 | - | ng/mL | <10 |
| D-dimer | 3.8 | 2.6 | mg/L | <0.5 |
| Troponin I | 0.04 | <0.01 | ng/mL | <0.04 |
| BNP | 210 | 165 | pg/mL | <100 |
| TSH | 5.8 | - | mIU/L | 0.4-4.0 |
| Free T4 | 0.9 | - | ng/dL | 0.8-1.8 |
| HBV DNA | <20 | - | IU/mL | <20 |

Electronically Signed By:  
Dr. R. Patel (Medical Oncology)  
Date/Time: 2025-04-01 14:45

Dr. S. Wilson (Pulmonology)  
Date/Time: 2025-04-01 13:30

Dr. L. Matthews (Interventional Radiology)  
Date/Time: 2025-04-01 12:15