

Abstract

Liver transplantation (LT) is the preferred treatment for hepatocellular carcinoma (HCC) in patients with decompensated cirrhosis. Recurrence of HCC after LT is rare, and high-risk features include viable tumor on explant, larger tumor size, elevated alpha fetoprotein (AFP), and micro/macrovascular invasion. The Risk Estimation of Tumor Recurrence After Transplant (RETREAT) score estimates HCC recurrence risk with a 5-year recurrence risk more than 75% in scores 5+. We present a case of extrahepatic recurrent HCC after LT.

Case Presentation

Chief Concerns

4-day history of progressively-worsening epigastric abdominal pain radiating downwards and distention

History of Present Illness

A 75-year-old male with history of alcohol-associated cirrhosis complicated by biopsy-confirmed HCC treated with radiofrequency ablation (RFA) presents three years post-LT with diffuse abdominal pain. His RETREAT score was 1 with negative surveillance scans through 1-year post-LT.

History of Past Illness

History of coronary artery disease status post right coronary artery percutaneous coronary intervention, type II diabetes mellitus, chronic kidney disease, hypertension, and obesity

Social and Family History

Tobacco: none
EtOH: none since 2016
Illicit: none

Laboratory Examinations

Blood urea nitrogen of 33 (normal range 6.0-20.0), creatinine of 3.63 (normal range 0.5 to 1.5), hemoglobin A1C of 5.7 (normal range < 5.7%), total bilirubin of 1.4 (normal range <= 1.2), direct bilirubin of 0.5 (normal range <= 0.2), alkaline phosphatase of 329 (normal range 40-125), aspartate aminotransferase of 218 (normal range 10-40), alanine aminotransferase of 76 (normal range 7-50), white blood cell count 192 (normal range 3.9-12), and hemoglobin 5.6 (normal range 13.2-18). Alpha fetoprotein was normal. Complete blood count and basic metabolic panel were otherwise normal.

Imaging

Contrast-enhanced computed tomography (CT) abdomen demonstrated an 11-centimeter omental mass with biopsy confirming HCC. Subsequent positron emission tomography scan showed isolated uptake at the omental mass. The patient later re-presented to a local hospital with abdominal pain and fatigue. CT abdomen revealed intraabdominal bleeding from the now enlarged mass (Fig. 1A), which necessitated resection (Fig. 1B). Pathology confirmed HCC (Fig. 1C-F).

Imaging

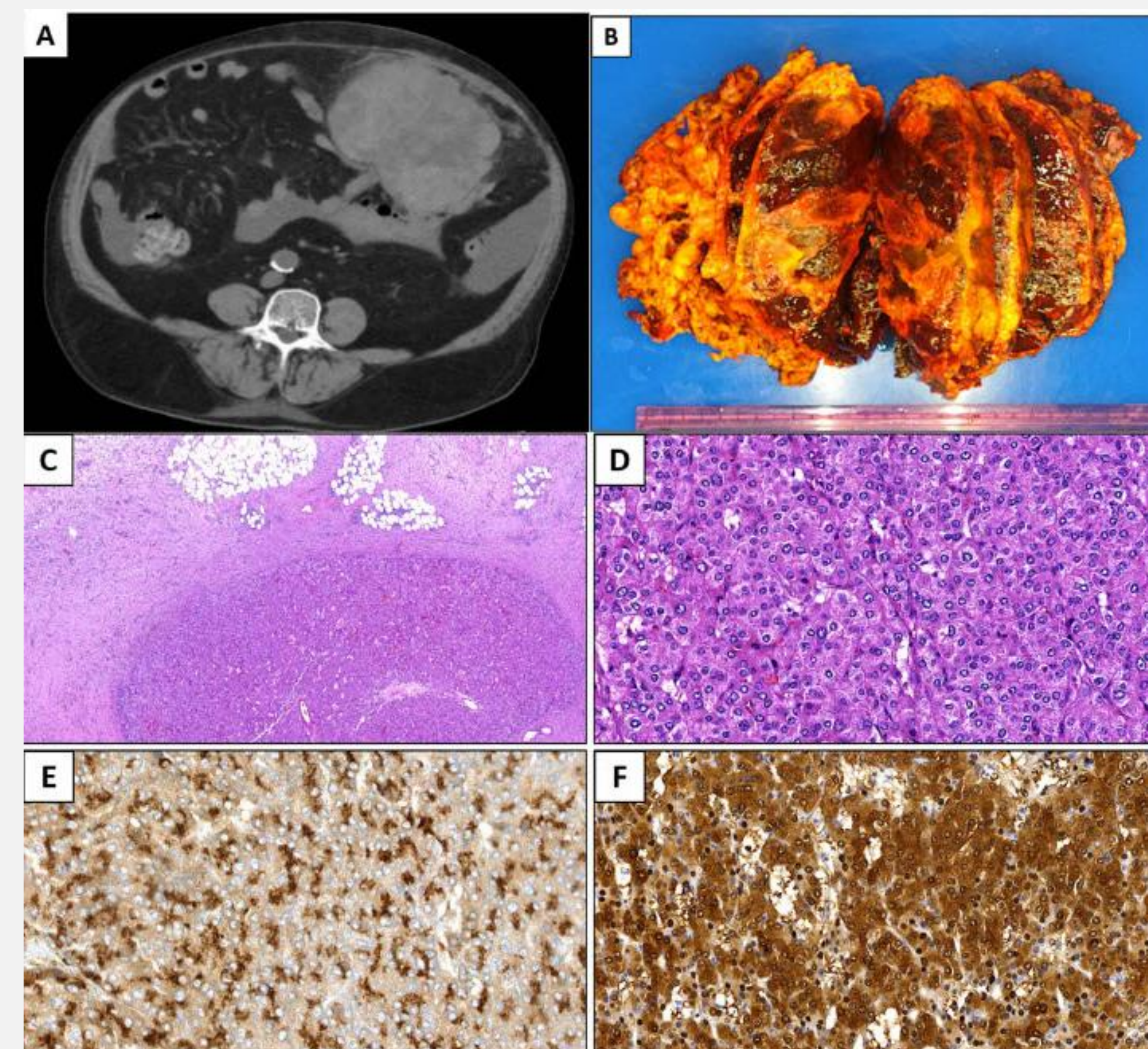


Figure 1. CT image, gross image, histomorphology, and immunophenotype of the omental mass. **(A)** Extrahepatic HCC presenting as omental mass. **(B)** An omentectomy specimen was received consisting of a tan-yellow, hemorrhagic segment of omentum measuring 21.5 x 17.6 x 9.3 cm. Serial sections of the specimen revealed a 15.1 x 12.5 x 9.2 cm tan-white, hemorrhagic, thinly encapsulated mass. Low-power magnification demonstrates a cohesive, well-circumscribed lesion infiltrating the omental connective tissue **(C, H&E stain, 20x)**. Intermediate magnification shows the lesion is composed of trabecular and solid sheets of atypical polygonal cells with nuclear pleomorphism, eosinophilic cytoplasm and thickened hepatic cell plates morphologically consistent with metastatic hepatocellular carcinoma **(D, H&E, 200x)**. The neoplastic cells demonstrate strong and diffuse staining with Glypican-3 **(E, 200x)**, and Arginase-1 **(F, 200x)**, thus confirming the diagnosis.

Treatment and Outcomes

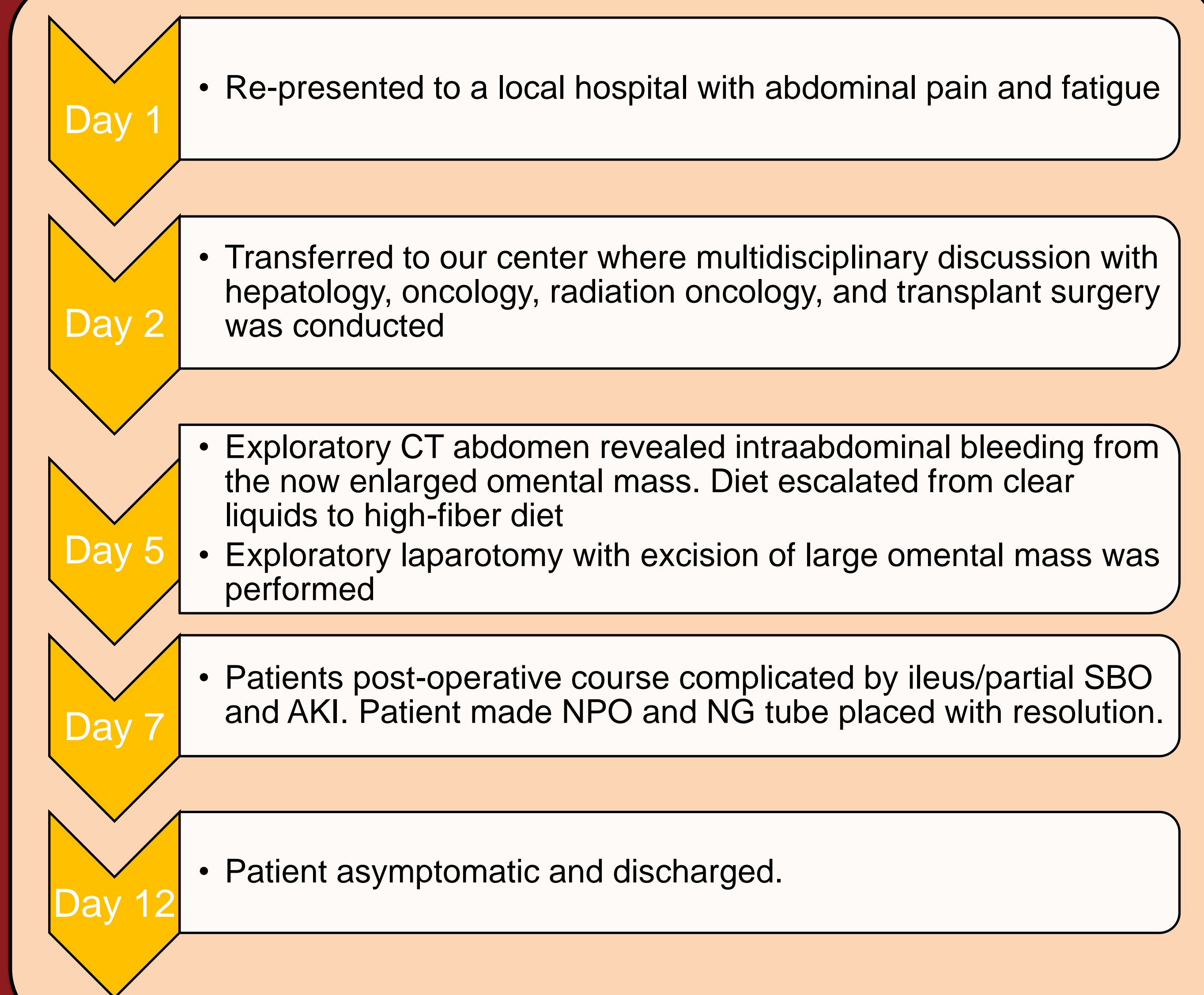
Treatment

Patient given a total of five units of packed red blood cells with improvement in hemoglobin. Exploratory laparotomy with excision of large omental mass was performed without complication.

Outcomes

Post-operative course complicated by ileus. Patient made NPO and nasogastric (NG) tube placed with copious return. Symptomatic improvement following morning; however, with persistent high output from NG tube. Therefore NPO for >48hr, complicated by mild starvation ketosis. Treated with D5 lactated ringer. NG output improved at which time NG clamped, and patient started on clear liquid diet, which he tolerated well. Patient advanced to general low sodium diet on day of discharge. Post-resection surveillance imaging has not demonstrated evidence of disease.

Hospital Course



Discussion

This case highlights the importance of continued HCC surveillance post-LT and the possible complications of RFA and biopsy. A diagnosis of HCC in cirrhotics can be made radiographically with the Liver Reporting and Data System (LI-RADS) criteria thus avoiding invasive diagnostics. Peak recurrence occurs within 2-3 years post-LT. The most common extrahepatic sites are lungs, bone, soft tissue, and peritoneum, and surgical resection is an independent predictor of long-term survival if metastatic disease is isolated to one organ. Systemic chemotherapy can be offered, but immunotherapy carries the risk of organ rejection in small studies. A multi-disciplinary approach should be pursued in patients with HCC recurrence post-LT.