Management of Hepatocellular Carcinoma

- Hepatologists, surgeons, medical oncologists, interventional radiologists, radiologists and radiation oncologists at Penn Medicine are treating patients with hepatocellular carcinoma and those at risk for the disease.

Hepatocellular carcinoma (HCC) is an increasingly prevalent problem in the United States. Hepatitis C-associated HCC is likely the major culprit for a dramatic increase in HCC incidence and mortality in the past two decades.1

There are many treatment options for patients with hepatocellular carcinoma.2 Since early detection offers the best opportunity for cure, screening for HCC in patients with cirrhosis is of utmost importance and is often a key determinant of outcome.

Surgical resection of the tumor can achieve cure of HCC, particularly when the tumor is small and liver function is preserved. With partial hepatectomy, there is always concern for development of another HCC in the remaining diseased liver, which can happen in up to 50-70 percent of cases. Liver transplantation is often the most effective treatment for HCC, if the tumor is within a certain stage. Because the entire liver is replaced, liver transplant circumvents the strict need for a good liver function that surgical resection requires. The other major advantage of transplantation is that it results in removal of the tumor as well as removal of the rest of the liver which, if left behind, will remain at risk of developing additional tumors. The result is that the recurrence rate of HCC after transplantation is 10-20%, and is much lower than it is after resection. A select group of patients with small, favorably located tumors can be cured with ablative therapies, such as percutaneous or laparoscopic radiofrequency ablation.

Effective treatment for HCC is possible also in patients with more advanced disease. Trans-arterial chemoembolization (TACE), in which a chemotherapy mixture is injected directly into the tumor and its blood supply is interrupted, results in tumor death and is effective at controlling even larger tumors. TACE is also useful to prevent tumors from growing while patients with smaller tumors are on the liver transplant waiting list. Radioembolization involves the injection of radiation-emitting beads into the tumor and is often an alternative option to TACE. Systemic chemotherapy in the form of the oral drug Sorafenib or clinical trials with newer drugs are also effective treatment options in advanced disease.

Navigating the various treatment options in HCC can be complex and requires the expertise of physicians with different areas of specialization. At Penn, patients presenting with liver tumors are discussed every week by a multidisciplinary team of specialists in the context of a conference. Patients are then evaluated by multiple physicians and surgeons with expertise in liver cancer and liver disease in a single visit to the Penn Liver Tumor Clinic where treatment options are discussed. The liver tumor team at Penn has the unique capability of an efficient and expert evaluation of patients, and is committed to offering convenient access to skilled medical and surgical care of a complex disease.

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Since the location of the lesion would require a right hepatectomy and the presence of varices indicated portal hypertension, it was felt that resection would carry a high risk of liver failure. The potential for the less invasive treatment option of radiofrequency ablation was discussed, but it was felt that this would be a suboptimal treatment in his case because he would be an excellent transplant surgical candidate.

Mr. A was seen in consultation in liver tumor clinic concurrently by a hepatologist, a transplant/hepatobiliary surgeon and an interventional radiologist. The risks, benefits and alternatives of the different treatment options were discussed. After reviewing his options, the patient elected to pursue liver transplantation.

He completed a liver transplant evaluation and was listed for transplantation. To prevent the tumor from growing while waiting for transplantation, TACE was performed. Partial tumor necrosis was achieved and the lesion remained stable in size until he received a transplant, about 9 months after being listed.

Pathology of the explanted liver showed moderately differentiated HCC in the right lobe, 2.8 cm in size; about 70% of the nodule was necrotic and there was no evidence of vascular invasion. The patient was enrolled in a surveillance program for recurrent disease, with serial imaging of the chest and abdomen. At 18 months post transplant, there is no evidence of recurrent HCC and the patient is asymptomatic.

References

ACCESS
Penn Transplant Institute
Liver Tumor Clinic
Perelman Center for Advanced Medicine
West Pavilion 2nd Floor
3400 Civic Center Boulevard,
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FACULTY TEAM
The Penn Liver Tumor Clinic brings together a multidisciplinary team of physicians, nurse specialists and hospital support staff who provide coordinated care throughout the treatment process. The goal is to meet the unique physical and emotional needs of each patient in a caring, professional environment.

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