Spontaneous Rupture of Hepatocellular Carcinoma

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A contrast enhanced computer tomography (CECT) abdomen of the patient showed hepatomegaly with nodular irregular liver margins. A 15.5 × 10.5 cm large exophytic heterogeneously attenuating mass seen arising from segment VI/VII with extension into the subphrenic space. Multiple right hepatic artery branches were supplying it. There was a breach in the lateral margin of the superior part of this mass lesion suggestive of rupture (Figures 1B and 2B).

The rupture of richly supplied hepatocellular carcinoma resulted hemorrhagic ascites in this case. Hence, bland embolization of the feeding vessels was planned to reduce the tumor bulk. Patient was taken up for transarterial embolization of the feeding vessels. A catheter was introduced into the celiac trunk via right transfemoral approach and selective celiac angiogram was performed which revealed multiple feeder vessels arising from the right hepatic artery (Figure 3). Following this, a microcatheter was co-axially introduced into right hepatic artery and selective runs were taken which confirmed arterial supply to the tumor through branches of the right hepatic artery (Figure 4). These feeding vessels were embolized using gelfoam. Post-embolization celiac angiogram showed complete nonopacification of the feeding vessels (Figure 5). Patient remained stable after the procedure. Patient was also started on tablet sorafenib three days post-embolization. His ascites gradually decreased.

Hepatocellular carcinoma is the commonest primary malignant tumor of the liver. Also, spontaneous rupture of a tumor is not very uncommon as initial presentation. In the Far East, the rupture rate is as high as 10%.¹ Without any treatment, the outcome is poor. Traditional surgical treatment consists of packing, hepatic artery ligation and hepatectomy. However, surgery is often

Figure 1B Axial contrast enhanced CT section showing a large heterogeneously enhancing mass lesion in right subphrenic space with capsular breach (thick arrow) along its lateral aspect with associated free fluid in the subphrenic space.

Figure 2B Sagittal reconstruction contrast enhanced CT image showing large tumor mass (thick arrows) extending into right subphrenic space. Tortuous feeding vessels (thin arrow) are also demonstrated.

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Abbreviations: CECT: contrast enhanced computer tomography; TAE: transarterial embolization

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Figure 3 Selective celiac axis run showing tortuous, feeding vessels (thick arrow) arising from branches of right hepatic artery (thin arrow).

Figure 4 Selective microcatheter (thin arrow) run showing multiple feeding vessels to the tumor (thick arrows).

Figure 5 Celiac axis post-embolization check run showing complete nonopacification of branches of right hepatic artery supplying the tumor.

associated with a high mortality rate, which has been reported to be as high as 70%.^{1,2} The major drawbacks of emergency hepatectomy are liver failure and tumor involvement of the resection margins due to inadequate preoperative work-up. Even less invasive procedures like packing, argon beam coagulation or hepatic artery ligation, are not different in terms of the operative morbidity and mortality. Hence transarterial embolization (TAE) is gaining popularity as a less invasive measure in this field.

Role of TAE in the management of ruptured HCC, especially for the initial period, has been well established. The mean survival rate of those who received TAE has been reported to be from one to twenty weeks.^{1,2} In one study, the mean survival rate of those having TAE performed was 126 days.³ TAE application should be selective when taking cost factor and complications into account. The level of size of tumor, bilirubin level and patency of portal vein may affect the outcome.⁴ The adverse effects of portal vein thrombosis and selective arterial embolization on patient's survival have been demonstrated in some studies.⁵ Embolization of the hepatic artery may cause further damage to the liver cell and lead to subsequent liver failure. However, the findings are not consistent in all these studies. In one of the studies, the survival following embolization of the hepatic artery proper or selective embolization of branches of the hepatic artery are comparable.³ The difference may result from the choice of embolic material. In our patient who also had portal vein thrombosis, we used gel-foam which is dissolvable and, therefore, the artery may recannulate after a period of time.

CONFLICTS OF INTEREST

All authors have none to declare.

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