Central hepatectomy post transarterial chemoembolization (TACE): Does it make surgery more difficult?

Naveen Rajaratnam, Koh Peng Soon, Yoong Boon Koon
Division of Hepato-Pancreato-Biliary Surgery, Department of Surgery, Faculty of Medicine, University of Malaya, Kuala Lumpur.

INTRODUCTION:
Hepatocellular carcinoma (HCC) is the fifth most common cancer in the world and develops in a cirrhotic liver as a sequalae of chronic hepatitis B and C infection as well as alcoholic liver disease. Treatment approach to HCC is ever evolving and challenging due to the nature of the disease. Potentially curative treatments for HCC include partial hepatectomy, liver transplantation and local ablative therapy. When the tumour is centrally located, it is technically complex to resect and if it is large, resection can sometimes be contraindicated.

In a large centrally located hepatic tumour, transarterial chemoembolization (TACE) is occasionally given preoperatively in the hope of shrinking or downstaging the tumour and making resection possible. Here, we report a case of a man with centrally located HCC who had a 2 sessions of preoperative TACE before undergoing central hepatectomy.

CASE REPORT:
Mr N, a 62 year old man presented in December 2010 with a raised Alpha-Feto Protein (AFP) levels of 90.9 IU/L. An ultrasound scan done showed a focal heterogenous solid lesion at the liver measuring 9.4 cm x 7.2 cm involving Segments 4, 6, 7 and 8. He was diagnosed with hepatocellular carcinoma following an MRI. His liver function test (LFT) was normal. Hepatitis screening showed presence of Hepatitis B infection. He was planned for transarterial chemoembolization (TACE) prior to liver resection in view of the long operating waiting time. The first TACE was done on the 17/11/11 where a mixture of DC Beads and Doxorubicin was injected into the right hepatic artery. He underwent a second TACE on the 16/3/11. He then underwent a central hepatectomy on the 7/4/2011. Intraoperatively, there was a 7 cm x 10 cm tumour involving the segments 4, 5 and 8 and was adherent to the gallbladder which was removed en-bloc. We encountered dense adhesions around the hilar region likely due to the previous TACE during dissection. The left intrahepatic duct was transected during dissection and primary anastomosis was done. Estimated blood loss was 1.5L.

His histopathological examination (HPE) report showed poorly differentiated hepatocellular carcinoma with clear surgical margins. The size of the tumour was reported at 5.5cm at its largest diameter with extensive necrosis at the periphery.

DISCUSSION:
Hepatocellular carcinoma (HCC) is often associated with a high morbidity and mortality risk. It remained the tenth most common cancer affecting our population based on the 2nd National Cancer Registry (NCR) 1. Surgical resection remained the cornerstone for cure although similar result is also reported with local ablative therapy and transplantation.

The use of transarterial chemoembolization (TACE) was initially introduced as a palliative procedure for unresectable tumours. It is a form of radiological intervention procedure where it involves the injection of chemotherapeutic agent such as doxorubicin using Lipiodol or DC beads into the hepatic artery supplying the tumour. Therefore it is able to deliver high concentrations of the drug to the tumour locally and thereby reduce the systemic side effects2. However, recent literatures have suggested that TACE can be given pre-operatively prior to liver resection in the hope of downgrading or shrinking the tumour size in order to make resection favourable hence improving long term results of patient outcome and surgery 3.

The use of pre-operative TACE has also been reported with centrally located HCC where TACE is useful in making resection favourable although larger tumours may make resection a contraindication due to the technical complexity of the surgery. It has been reported that preoperative TACE for centrally located HCC is associated with perihepatic adhesions, pediculitis, chronic cholecystitis and increase in operating time as well as increase intraoperative blood loss although there was improvement in long term survival with preoperative TACE 3.

In our patient, he had 2 sessions of pre-operative TACE prior to resection in view of long operating waiting time where TACE is used as a bridging therapy. Although adhesions were encountered during dissection and resection, central hepatectomy was feasible with minimal morbidity and following TACE, excised tumour was also found to be smaller than previously reported radiologically and HPE also showed extensive peripheral necrosis.

CONCLUSION:
In conclusion, the use of preoperative TACE in a centrally located HCC is a viable option to downgrade the size and burden of the tumour thereby making resection favourable. Nevertheless, such surgical procedure involves complexity in surgical resection and it is not without perioperative morbidity.

References: