Hepatocellular carcinoma (HCC) is one of the most common malignancies. Liver cirrhosis and long-term infection of hepatitis B are associated with the HCC in the majority of Chinese patients. The treatment could be a little different from patients in other country, but the surgical rules are similar. Liver resections remove tumors together while preserving enough liver remnant for normal metabolic function offering the best prognosis for long-term survival. Surgical techniques for HCC have been improved in the recent thirty years with innovations in optics, computer science, material science etc. laparoscopic liver resection emerged in 1990s which decreases the surgical trauma and postoperative pains and CT-based 3D reconstruction improves the accuracy of managing intrahepatic vessels. New dissection instruments and energy devices were developed and facilitated liver resection with meticulous dissection or/and effective coagulation. Liver failure is still a troublesome complication in major liver resections. Normally, the estimated future liver remnant (FLR) less than 40%/30% is the contra-indication for patients with/without liver cirrhosis. In 2012, associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) reported. It could trigger fast liver regeneration after the first-stage operation and the indication for liver resection is extended to patients with less FLR. According to recent reports, ALPPS was performed successfully even on patients who had only one segment preserved. However, ALPPS is very traumatic and risky with two raw-surfaces of transected liver left in the abdominal cavity after the first stage-operation, resulting in higher incidence of bile leak and mortality. It would be much better if transection of the liver can be avoided in the first-staged, while the same effect of future liver remnant rapid hypertrophy can be achieved. This concept has been realized in three different ways, namely, Round-the-liver ligation to replace parenchymal transaction (1); Percutaneous Ablation and Liver Partition Planned hepatectomy (PALPP) (2); and Terminal branches portal vein Embolization Liver Partition Planned hepatectomy (TELPP) (3). Furthermore, only one operation is required when PALPP or TELPP is performed.

In addition to the conventional potentially curative treatments, such as liver resection and liver transplantation, some non-surgical treatments have been applied to improve the effect. Image-guided percutaneous radiofrequency ablation, microwave ablation and cryotherapy could improve therapeutic effects in selected patients with or without operations. Transhepatic Arterial chemotherapy and embolization (TACE) have been accepted in HCC treatment for patients who are not amenable for surgery or as a bridging or downstaging method for the future potentially curative treatment. Recently, systemic therapies, including molecular target therapy, systemic chemotherapy and immunotherapy, are adopted as an important palliative method. Progress has been made for the past few decades, Multidisciplinary strategy is required for each patients. Greater progress is expected. International co-operation would be of paramount importance in conquering this drastic disease.

References


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