Surgical outcome of laparoscopic liver resection in developing country


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Background

• The need of liver surgery in Mongolia is vast; subsequently Hepato Cellular Carcinoma (HCC) incidence in Mongolia is six times greater than world average and representing 44.2% of all new cancer in Mongolia due to hepatitis “C” and “B” viral infection. HCC is first leading cause of cancer related mortality in Mongolia.
• The liver cirrhosis appears in 86.8% of all HCC patients. Alcohol abuse and hepatitis C have a synergistic effect in increasing risk for HCC in Mongolia.
• Only 14% of all now diagnosed HCC’s undergo for liver resection. Therefore the early HCC’s or small sized liver cancers are relatively rare and that influence for selection criteria of laparoscopic surgery in our center.

Introduction

• Since Dr. Enkh-Amgalan et al successfully performed the first laparoscopic liver resection of Mongolia in 2010 in our center, we performed sixty cases of LLR including malignant and benign lesion.
• The aim of this study is to analyze our data’s and create enhancements on our outcome and to share developing countries experience of laparoscopic liver resection with limited instruments and access.

Method

• From September 2009 to June 2014 there were malignant and benign total sixty cases of laparoscopic liver resection are performed and database of single center study is retrospectively collected and analyzed by SPSS-21.

Indication

Liver cancer of left lobe

Parenchymal dissection

Parenchymal dissection

Removal of the tumor

• The specimen is removed with an endobag, possibly via a Pfannenstiel incision or an enlarged trocar site, depending on the size of the specimen. When CUSA dissector is used, the specimen is removed by the mini-laparotomy incision that used for CUSA hand.

Results

• There were 28(46.7%) male and 32(53.3%) female patients.
• The tumor was unique in 55 and multiple in 5 patients, there was two lesions in both multiple tumor patients. A patient underwent tumorectomy from segment III for d=2cm, second tumor was situated in segment VIII about 1.5 cm and intra-operatively ablated by intercooling radio frequency ablation (RFA-cool system).

Discussion

• Partial resection of the peripheral liver or a left-lateral segment resection is more feasible for laparoscopic approach, because the periphery of the liver is devoid of large venous structures and bleeding can be easily controlled with clamps or cautery.
• In open liver surgery we use IOUS to determine the intrahepatic metastasis presence and the hepatic veins for resection line. With the limitation of instruments we could not perform the IOUS in laparoscopic surgery such as we frequently perform in open surgery.
• Vessel sealing instruments such as LigaSure and Harmonic scalpel can seal the vessels at maximum 4-5mm but we prefer titanium endoclips in more than 3mm vessels and small bile ducts to prevent from bile leakage and post-operative hemorrhages from parenchyma.

Conclusion

• The patients with small tumors, located in the left lateral segments or in the anterior-lateral segments of the right liver, laparoscopic resection are feasible and safe in resources limited countries such as Mongolia. To expand our criteria for laparoscopic major we need more experience on laparoscopic hilar dissection and particular instruments as laparoscopic CUSA dissector, laparoscopic ultrasound transducer and specially a well trained multi-disciplinary team including surgical nurses and technicians.