ALPPS Procedure, a report of the first three cases from Gulf Cooperation Council Countries

Ibrahim Alhasan, Abdullah Algarni, Helayel Almodhaiberi, Saad Alzulfah
Department of Surgery, Prince Sultan Military Medical City, Riyadh, Saudi Arabia.

• BACKGROUND: Resection is the only curative treatment option for primary and secondary malignant liver tumors. Liver insufficiency is one of the most serious postoperative complications of patients undergoing extensive liver resections. A new strategy to increase the resectability for patients with marginally resectable liver tumors previously considered to be unresectable. This technique consists of a two-staged hepatectomy with initial portal vein ligation and in situ splitting of the liver parenchyma (ALPPS).

• AIM: To report our first series of patients with marginally resectable colorectal liver metastasis previously considered to be unresectable treated with ALPPS. The first patient underwent ALPPS was on June 2017 and the last patient was done on January 2018. All patients had high tumor load requiring staged hepatectomy after chemotherapy response, a predicted future liver remnant (FLR) < 30%, and good performance status. Two of the three patients underwent simultaneous ALPPS. All patient underwent the second stage successfully.

• RESULTS: The median age was 55 years with an average BMI of 30.3 kg/m². All patients were diagnosed with colorectal liver metastases. The ratio of FLR to TLV before the first procedure ranged from 17% to 21%. In all patients, a rapid growth of the FLR was observed. Estimates of the FRL volume prior to surgical treatment ranged from 276 to 377 cc, with a mean of 343 cc. The FRL volume increase had a mean of 93.5%. The second procedure was performed after 7 days. The postoperative complications observed in one patient were an asymptomatic right pleural effusion and bile leak in another patient treated conservatively, The first patient underwent ALPPS had a recurrence after 1 year and treated with non-anatomical resection.

• CONCLUSION: ALPPS technique effectively increased the resectability of otherwise unresectable liver tumors. This is a technically demanding procedure and should be undertaken only with proper assessment and meticulous technique.