

Submission No.: PG03-5333

Session : Postgraduate Course 3 (Liver)

Date & Time, Place : November 17 (Thu), 10:30-12:00, Room 3F-1

Session Title : Recipient Hepatectomy & Implantation (Video Session)

Management of Difficult Hepatic Artery Reconstructions to Reduce Complications Through Continual Technical Refinements in Living Donor Liver Transplantations

Tsan Shiun Lin

Kaohsiung Chang Gung Memorial Hospital, Taiwan

Management of Difficult Hepatic Artery Reconstructions to Reduce Complications Through Continual Technical Refinements in Living Donor Liver

Transplantations Tsan-Shiun Lin¹, M.D.; Cen-Hung Lin¹, M.D.; Pao-Jen Kuo¹, M.D.; Johnson Chia-Shen Yang¹, M.D.; Yuan-Cheng Chiang¹, M.D.; Wei-Feng Li², M.D.; Shih-Ho Wang², M.D.; Chih-Che Lin², M.D.; Yueh-Wei Liu², M.D.; Chee-Chien Yong², M.D.; Chao-Long Chen², M.D.; Yu-Fan Cheng³, M.D.; Chih-Chi Wang², M.D. 1 Department of Plastic and Reconstructive Surgery, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan 2 Liver Transplantation Center and Department of Surgery, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan. 3 Liver Transplantation Center and Department of Diagnostic Radiology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan. **Abstract** Background Hepatic artery reconstruction (HAR) for liver transplantation is crucial for successful outcomes. We evaluated transplantation outcome improvement through continual technical refinements. Materials and Methods HAR was performed in 1,448 living donor liver transplants by a single plastic surgeon from 2008 to 2020. Difficult HARs were defined as graft or recipient hepatic artery ≤ 2 mm, size discrepancy (≥ 2 to 1), multiple hepatic arteries, suboptimal quality, intimal dissection of graft or recipient hepatic artery (HA), and immediate redo during transplantation. Technique refinements include early vessel injury recognition, precise HA dissection, the use of clips to ligate branches, an oblique cut for all HARs, a modified funneling method for size discrepancy, liberal use of an alternative artery to replace a pathologic HA, and reconstruction of a second HA for grafts with dual hepatic arteries in the graft. Results Difficult HARs were small HA (21.35%), size discrepancy (12.57%), multiple hepatic arteries (11.28%), suboptimal quality (31.1%), intimal dissection (20.5%), and immediate redo (5.18%). The overall hepatic artery thrombosis (HAT) rate was 3.04% in this series. The average HAT rate during the last 4 years (2017 to 2020) was 1.46% (6/408), which was significantly lower than the average HAT rate from 2008 to 2016 (39/1040, 3.8%) with a statistical significance ($p=0.025$). Treatment for posttransplant HAT included anastomosis

ATW 2022 **Nov. 17^(Thu)~19^(Sat), 2022**

CONRAD SEOUL, Seoul, Korea

after trim back (9), reconstruction using alternatives (19), and nonsurgical treatment with urokinase (9). Conclusion Careful examination of the HA under surgical microscope and selection of the appropriate recipient HA are key to successful reconstruction. Through continual technical refinements, we can reduce HA complications to the lowest degree.