rest 19 (2.3%) included 6 ileus lasting more than a week, 5 intra-abdominal abscess, 4 postoperative bleeding requiring transfusion, 3 intractable ascites, 1 ventral hernia. According to the classification of the severity of complication, the modified Clavian grade, grade I complication was recognized in 56 (67.5%) donors. Grade II, IIIa, IIIb complications was also emerged in 2 (2.4%), 15 (18.1%) and 10 (12.0%) donors, respectively. There was no grade IV or V event. Among donors with biliary complications, 5 (grade I) were treated conservatively and 1 (grade II) was cured by antibiotics without appropriate drainage. Interventional management was successful in 10 donors (grade IIIa), such as percutaneous/endoscopic biliary drainage, percutaneous peritoneal drain, and combination of balloon dilatation. Although overall complication did not have a link with any of donor characteristics, the incidence of biliary complication was correlated with donor age. As the donor age was young, the incidence of biliary complication was significant higher ($r=-0.237$, p-value=0.031<0.05).

Conclusion: This study demonstrated the safety of donor hepatectomy with less serious and easily controllable complications. Additionally, our results figured out that the incidence of biliary complication had a inverse correlation with donor age.

15

Living Donor Liver Transplantation for Type II Citrullinemia in the Korean Patient

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Citrullinemia is an autosomal recessive disease caused by a deficiency of argininosuccinate synthetase.

Type II citrullinemia is clinically characterized by a sudden onset of consciousness disturbance, a high serum citrulline concentration, a slightly increased serum arginine concentration, and hyperammonemia. Although no effective treatment for type II citrullinemia have been available, liver transplantation was recently performed and proved to be effective in elimination of hyperammonemia and plasma amino acid abnormalities. Many cases of liver transplantation have been reported in the Japanese citrullinemia patient, but there is no report in the Korean citrullinemia patient. This is the first report of a Korean patient with living donor liver transplantation on citrullinemia type II. A 19-year-old male was referred to our hospital for altered mentality on April 24, 2010. He was first admitted to a hospital because of elevated aspartate aminotransferase and alanine aminotransferase on 2002. He had been healthy until 2001. At that time, urine amino acid analysis and tandem mass neonatal screening test revealed hyperammonemia and increased citrullinemia level. He was diagnosed as type II citrullinemia, and he was given a conservative treatment of sodium benzoate, arginine and a low protein diet. However, he suddenly went into a delirious state on April 23, 2010. He showed altered mentality and very high concentration of plasma ammonia and citrulline. So he referred to our hospital on April 24, 2010. We started intravenous infusion of arginine and branched amino acids, and he was given a low protein diet. A computed tomography scan revealed hepatosplenomegaly and small amount of ascites in pelvic cavity. Considering his liver and the poor prognosis with such conservative therapies, he was treated with living donor liver transplantation on June 9, 2010. The patient's whole liver was removed and part of his father's liver (the left lobe) was transplanted. Soon after surgery, the consciousness disturbance completely disappeared, accompanied by normalization of the ammonia. Over the subsequent 2-month follow-up, the patient's condition has remained fairly good.

16

De novo Malignancy in Liver Transplant Recipients

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Purpose: De novo malignancy is a frequent compli-