duct has not been proven to improve the surgical outcomes in patients with macroscopic bile duct thrombi without direct bile duct wall invasion. Therefore, it seems not absolutely necessary to remove the bile duct thrombi together with extrahepatic bile ducts in this type of HCC, unless the thrombi invasion to the bile duct wall is suspected or confirmed.

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Case Report: Living Donor Liver Transplantation for HEV Fulminant Hepatitis

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Acute hepatitis E is an endemic disease, commonly reported in Indian subcontinent, China, Africa, Central America, and so forth. Epidemics due to HEV mostly originate from contaminated water and the virus is transmitted by fecal oral way. It is generally accepted that hepatitis E is mostly self-limited and never progresses to chronicity. Hepatitis E virus (HEV) clinical presentations range from asymptomatic infection to fulminant hepatitis which is frequently seen in pregnant women, And it has a higher mortality in pregnant women where the disease condition is accentuated with the development of fulminant liver disease. In Korea, Hepatitis E is rarely reported. Moreover, sporadic acute hepatitis E without travel history to HEV-endemic area is very rare. We experienced one sporadic case of fulminant hepatitis E, without travel history. A 64-year-old female housewife, living in small village with no history of alcohol consumption and no close contact with animals was admitted in Asan Medical Center with itching sence and jaundice. Biochemical parameters on admission were as follows: total bilirubin=10.6 mg/dl; aspartate aminotransferase (AST)=1,668 U/L (reference value <19 U/L); alanine aminotransferase (ALT)=1,881 U/L (reference value <23 U/L); and lactate dehydrogenase (LDH)=532 U/L (reference value <140 U/L). Liver synthetic function, as defined by international normalized ratio (INR) estimation, was 1.2. After 6 days total bilirubin=37.3 mg/dl; AST/ALT=234/306 U/L and INR=7.79. Serologic study showed that Anti-HEV IgM was not detected and Anti-HEV IgG antibodies was positive in the serum. Serologic studies of HBV, HCV, and HAV showed all negative finding. This patient was diagnosed with fulminant hepatitis due to HEV and Emergency living donor transplantation was performed. 7 days after operation, this patient is recuperating well and liver function is good. Biochemical parameters are total bilirubin=5.3 mg/dl, AST/ALT=19/70 U/L and INR=1.02. When we carry out the serologic tests for diagnosis of acute hepatitis, we must consider HEV hepatitis.

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Successful Treatment of Colonic Mucormycosis after Liver Transplantation

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Purpose: Mucormycosis (MMC) is a frequently lethal invasive fungal infection in high-risk patients such as the immunocompromised and patients with diabetes mellitus. MMC after liver transplantation (LT) is rare but carries a very high mortality, being reported as high as 98% for gastric MMC. The hypae have a special affinity for blood vessels, which may explain the clinical presentation of the colonic infection as an ischemic colitis pattern. The authors experienced a case of colonic MMC in a LT recipient that was managed successfully. We want to discuss about its clinical presentation, diagnosis and treatment.

Methods and Results: A 41-year-old male underwent deceased-donor LT for hepatocellular carcinoma and HBV liver cirrhosis. He suffered from diabetes for 26 months but withheld insulin therapy for the last several months of his own will. The LT procedure was done uneventfully. His initial postoperative recovery was uneventful except poor control of blood sugar level. Even with infusion of high dose of insulin, his blood sugar level rose up to 497 mg/dl and was controllable at around 200 mg/dl since 48 hours after the operation. Triple immunosuppressant of steroid,

FK 506 and MMF was given. After taking only 3 doses of 0.1 mg/Kg/day of FK 506, the trough level recorded 28.3 ng/ml at the 2nd postoperative day (POD). On the 4th POD, he moved the bowel 8 times. It was mucoid, blood tinged or hematochezic. Next day, abdominal CT and sigmoidoscopy was done. Ischemic colitis was noted from the hepatic flexure to sigmoid colon on both examinations (Fig.). Peak WBC count was 27,800/μl with 92% of neutrophil at the 6th POD. Combined mucormycosis and aspergillosis was diagnosed on pathologic examination of the colonic tissue. Liposomal amphotericin B was given at a dose of 3.5 mg/Kg for 24 days. Oral antifungal agent was not given thereafter. 18 days after the initial sigdmoidoscopic examination, no fungal organism was demonstrated by PAS and GMS staining. However, CMV was positive for nucleus on immunohistochemistry. Gancyclovir was administered intravenously for 2 weeks and then changed to oral Valgancyclovir that was given for another 6 weeks. He was discharged from the hospital 41 days after the LT. And he is in a good general condition without any antifungal or antiviral medication since 6 weeks after the hospital discharge.

Conclusion: Colonic mucormycosis after LT may present as early as 4 days after the operation as a form of ischemic colitis, which shows mucoid and bloody diarrhea. It should be listed as one of the causes of early post-transplant diarrhea, especially in a diabetic recipient who showed poor control of sugar level. Biopsy is essential for a confirmatory diagnosis. A successful outcome would be dependent on the aggressive control of blood sugar level, good general condition (including neutrophilia) and administration of liposomal amphotericin B. It also should be borne in mind that CMV colitis may ensue.

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A Case of Hepatic Angiomyolipoma is Difficult to Exclude Malignancy

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Background: hepatic angiomyolipoma is a rare benign tumor. Since hepatic angiomyolipoma was reported first by Ishak in 1976, only about 200 cases were reported. We report a case of hepatic angiomyolipoma.

Case: A 64-year-old female patient visited to our outpatient department complaing of pitting edema on both legs. She had the history hypertension. Physical examination showed abnormal findings except pitting edema. Abdominal sono showed 3.5 cm size hyperechoic mass in segment II of liver. On admission, laboratory results revealed no abnormal finding including tumor markers. A preoperative MRI showed a 4 cm sized mass has large amount of fat, but it was well enhanced in aterial phase washed out in portal and delayed phase. On the preoperative biopsy of the mass, the tumor has proliferation of atypical spindle cells with high vascularuty and adipose tissue. So it was suspicious fat containing tumor such as angiomyolipoma, hemangioendothelioma, angiosarcoma and liposarcoma but it cannot be exclude possibility of malignancy. Lt. hemihepatectomy was done. Specimen is consisted of left lobe of liver measuring 16x10 cm. On serial section, there is yellowish mass measuring 4x3 cm, which was 2 cm apart from resection margin. The tumor is composed of spindle cells, tortuous vessels and adipose tissue. The tumor cells are positive for Vimentin ,SMA ,HMB45 but negative for hepatocyte antibody, CEA, S-100 and Ki-67 index is about 10~20.

The patient recovered without complication and was discharged on postoperative day 10.

Conclusion: Because it was not reported that hepatic angiomyolipoma has malignant potentials, regular follow up is sufficient to the patient when the tumor was diagnosed with angiomyolipoma. But because it is clinically difficult to exclude possibility of malignancy, resection of tumor is preferred. When hepatic angiomyolipoma was completely resceted, patients can have a good prgnosis with nearly 100% cure rate.