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LIVER TRANSPLANTATION

1

COLONIC BLEED AFTER LIVER TRANSPLANTATION DUE TO MUCORMYCOSIS—A CASE REPORT AND REVIEW OF LITERATURE

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Gastrointestinal mucormycosis (GIM) is a rare but highly invasive, potentially lethal fungal infection in transplant recipients. Isolated colonic mucormycosis is very rare. We report the case of a patient with cryptogenic cirrhosis who developed lower gastrointestinal bleed on day 20 following her liver transplantation. Initial investigations were inconclusive. On surgical exploration, she was found to have a lesion in transverse colon. She underwent a segmental resection of the colon with colocolostomy. Further examination of the lesion revealed an ulcer with an eroded artery at its base. The contact smear from this lesion raised a suspicion of a fungal lesion, which on histology was confirmed as mucormycosis. She was started on i.v. Amphotericin B in the postoperative period. She responded well to the therapy and had an uneventful postoperative course after that. A review of the English literature revealed that this was the first instance of an isolated mucor infection of the colon in a liver-transplant recipient. Patients with GIM following liver transplantation who received only medical therapy died and those who received both surgical and medical therapy had a good survival outcome. Medical therapy alone is seldom likely to bring about cure as the penetration of the antifungal agent is impeded by the angio-invasive nature of the mucor with resultant thrombosis of blood vessels. Hence, a high index of suspicion and a low threshold for surgical intervention, when suspected, are needed to manage effectively this kind of rare complication.

2

PROLONGED WEANING FOLLOWING LIVER TRANSPLANT—A CASE REPORT

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Background: Liver transplant is an established treatment modality for patients with end-stage liver disease. We describe the postoperative course of a liver-transplant recipient who had a prolonged ICU stay and critical care issues pertaining to the same.

Case Report: A 39-year-old gentleman with alcohol-related chronic liver disease, Child's class C, MELD 25, underwent a living-related liver transplant in our institute. He had received treatment for pulmonary Koch's disease 8 years ago and was presently having a fair exercise tolerance with a metabolic equivalent of task (MET) 4. Two-dimensional echocardiography revealed a concentric left ventricular hypertrophy, with a right ventricular systolic pressure of 52 mmHg and a mild pulmonary artery hypertension with a mean pulmonary artery pressure of 28 mmHg. The surgery lasted for 12 hours with an approximate blood loss of 5.8 L adequately replaced with 3 packed red blood cells, 7 fresh frozen plasma, 6 Cryo and 1 single donor platelet. After fulfilling all extubation criteria, the trachea was extubated on postoperative day (POD) 1 as per normal protocol. However, on POD 2, the patient became tachypneic, hypoxic, and the chest radiograph suggested a fluid overload which was managed conservatively with fluid restriction, diuretics, and non-invasive ventilation. On POD 3, he continued to deteriorate and was managed with invasive ventilation. Over the next week, he became symptomatically better and a trial of extubation was given which was unsuccessful. Subsequently, he developed pneumonia which was treated with sensitivity-directed antibiotics. The patient failed all subsequent spontaneous breathing trials and a percutaneous tracheostomy was eventually done. All efforts were made to contain the possible sources of infection in such critical immunosuppressed patients with due attention to adequate nutritional supplementation, aggressive physio- and psychotherapy; yet the patient did not improve. On the basis of clinical suspicion, antitubercular therapy (ATT) was started empirically with Isoniazid 300 mg, Rifampicin 450 mg, Ethambutol 800 mg and Moxifloxacin 400 mg. Within the next 3 weeks, the patient showed definite

signs of improvement and could be weaned-off ventilatory support and was finally discharged on POD 92.

Conclusion: Through this case, we would like to highlight the existence of cirrhotic cardiomyopathy in these patients which manifests as cardiac failure under stress as well as the need for tuberculosis prophylaxis in transplant recipients with a history of treated tuberculosis.

3

ANESTHETIC MANAGEMENT OF LIVER TRANSPLANTATION FOR FACTOR VII DEFICIENCY IN A 6-MONTH-OLD CHILD—THROMBOELASTOGRAPHY-GUIDED INTRA-OPERATIVE REPLACEMENT OF RECOMBINANT FACTOR VIIa

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Background: Inherited factor VII (FVII) deficiency is a rare hemorrhagic disorder caused by a defect in hepatic factor VII synthesis. Intravenous administration of recombinant FVIIa (rFVIIa) is widely used for the treatment of FVII deficiency, but this requires multiple, expensive injections, and the affected individuals face a constant risk of life-threatening hemorrhage. Liver transplant may offer a permanent curative treatment option in this classification of patients.

Aim: We describe the anesthetic management of a 6-month-old child, weighing 6.8 Kg, with a history of severe congenital FVII deficiency, who underwent a successful liver transplant at our institute. He is the youngest patient to receive a live donor liver transplant (LDLT) to overcome this deficiency.

Method: *Case summary:* A 6-month-old male baby, diagnosed as a case of FVII deficiency at 3 months of age, was taken up for LDLT. Intravenous induction, invasive central venous pressure and arterial blood pressure monitoring were done. Thromboelastography-guided titrated doses of rFVII were administered intra-operatively to ensure an optimal coagulation during the dissection phase. The thromboelastography-aided timing of rFVIIa administration also prevented hypercoagulation during the delicate vascular anastomosis. The total anesthetic duration was 12 hours. The child was shifted to the postoperative unit for elective ventilation and was extubated 8 hours later.

Result: FVIIa level improved in the postoperative period and was 24.3% on the seventh postoperative day. All other biochemical markers were near normal and liver function tests revealed improvement.

4

POSTOPERATIVE CHANGES IN COAGULATION PARAMETERS IN 105 PATIENTS UNDERGOING LIVE DONOR HEPATECTOMIES—IMPLICATIONS FOR EPIDURAL ANALGESIA

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Background: Epidural analgesia is effective in ameliorating the excruciating postoperative pain in donors. However, coagulation derangement has been reported following major hepatic resections and its safety in liver donors is debatable.

Type of Study: Retrospective, observational study in 105 patients undergoing live donor liver transplant (LDLT).

Aim: The primary aim of this study was to analyze changes in the postoperative coagulation parameters for the first 5 days and to establish whether postoperative changes in international normalized ratio (INR) are related to the amount of liver remaining after donor liver graft excision. The secondary aim was to comment on the safety profile of epidural analgesia in live donors.

Method: Coagulation derangement was defined as one or more of the following: peak INR ≥ 1.5 , peak aPTT ≥ 46 seconds, or nadir platelet count $\geq 100,000$. The worst INR recorded over the first 5 days was noted as the peak INR. The peak INR value was correlated with the remnant liver weight percentage (RLW%) applying the Karl-Pearson coefficient of correlation. All cases with INR ≥ 1.5 on postoperative day 5 were noted as a delay in the epidural catheter removal, and any neurological sequel was documented as an adverse event.

Result: Donors of 88.6% had a coagulation derangement, but with spontaneous recovery in 82.9% patients by postoperative day 5. Epidural catheter was safe in all patients in our series. A significant relationship ($P=0.05$) existed between the peak INR and the amount of liver remaining after graft excision.

Conclusion: Epidural catheter placement was safe in all donors.