LIVING DONOR LIVER TRANSPLANTATION FOR ADVANCED HEPATOCELLULAR CARCINOMA USING NO-TOUCH ISOLATION TECHNIQUE

FIRST CASE IN MYANMAR

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BACKGROUND

No touch isolation technique was popularised by Turnbull in 1970s for colorectal cancer surgery. (1) after the evidences of tumour cells were demonstrated in the portal blood during the resection(2). Its emphasis was vascular control before mobilization of the tumour bearing segment in order to reduce cancer cells flowing from the primary tumour site(3). Eventually, this technique can be applied to other organs like pancreas and liver.

No touch isolation technique in liver resection for the right hemi hepactectomy (also known as Anterior Approach) has shown the comparable result with the conventional method in terms of safety and effectiveness and advantages in terms of blood transfusion, mortality and recurrence.(4) Therefore it was recommended as the standard technique for curative resection of large hepatocellular carcinoma in the right liver(5). This case report intend to highlight the same technique applied to recipient hepactectomy with large hepatocellular carcinoma.

METHOD

44 yr male patient, Hepatitis B infected, Child A Hepatocellular Carcinoma 8cm at segment VII and VIII of the liver with no extrahepatic metastasis on PET scan underwent LDLT as a part of collaboration between Seoul National University Hospital of Republic of Korea and Yangon Speciality Hospital of Myanmar on 8th Dec 2016.

Tumour was found to invade into the right dome of diaphragm. Slings were put around supra and infra hepatic inferior vena cava(IVC) and right hepatic vein (Fig 1 & 2). After negotiating with anaesthesia team, inflow controlled by clamping the hilum and the slings tightened (Fig 3). Bypass was not applied. Mobilisation was then started swiftly that include excision and repair of the tumour involved diaphragm (Fig 4-10). The graft was implanted and supra and infrahepatic IVC clamps were released after hepatic vein anastomosis (Fig 11). Portal vein was anastomosed (Fig 12) and the graft was perfused (Fig 13) by releasing the portal clamp. Hepatic artery and biliary anastomosis were performed (Fig 14).

Method: Operative steps Photos

Fig1: Infrahepatic IVC was slinged

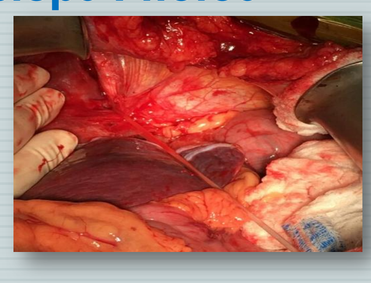

Fig2: Suprahepatic IVC was slinged

Fig 3: Vascular control applied

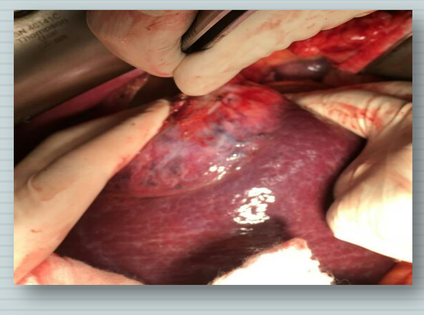

Fig 4: Mobilisation from diaphragm

Fig 5: Mobilisation from lateral wall

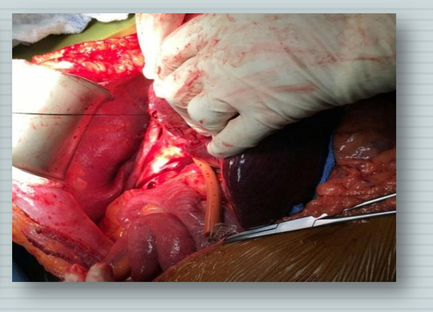

Fig 6: Mobilisation from IVC

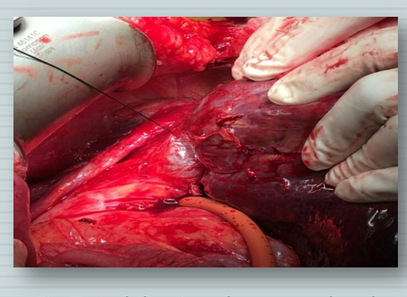

Fig 7: Mobilisation almost completed

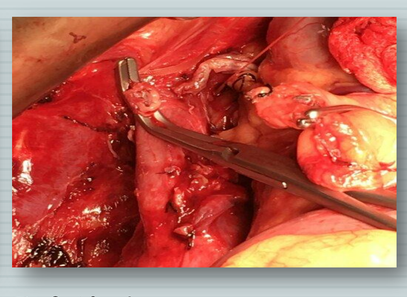

Fig 8: After hepatectomy

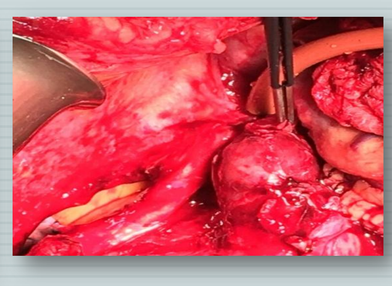

Fig 9: Diaphragm defect

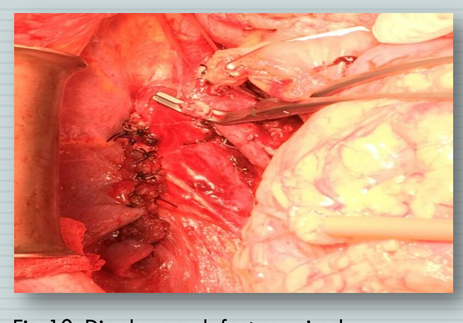

Fig 10: Diaphragm defect repaired

Fig 11: Hepatic vein anastomosis

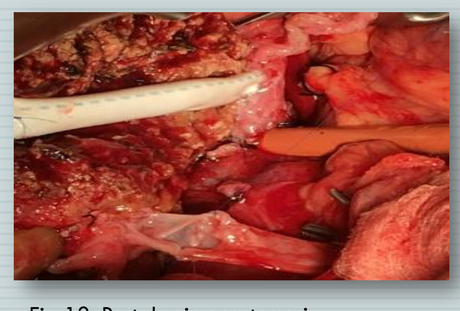

Fig 12: Portal vein anastomosis

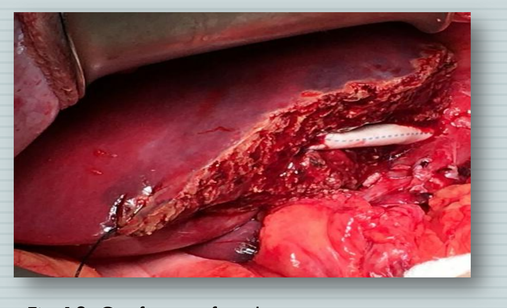

Fig 13: Graft reperfused

Fig 14: Hepatic artery anastomosis

Fig 15: Specimen as awhole

Fig 16: Cut specimen

CONCLUSION

No Touch Isolation Technique in Recipient Hepactectomy is feasible and should be considered in large hepatocellular carcinomas.

RESULTS

Intra operative period

IVC clamping time was 40 minutes and portal vein clamping time was 55 minutes and the total operation time was 345 min. Diaphragm repair took 20 minutes.Total blood loss was around 500 ml and no blood transfusion was required. No major change in vital signs apart from sme fluctuation during clamping and declamping. Bowel edema or discoloration were not seen.

Post operative period

Doppler signal on vessels could be demonstrated. Usual immunosuppressive regimen was started (Steroid, Tacrolimus and Mycophenolate). No delay in return of gut motility. Recovery was uneventful except temperature spikes and minimal pleural effusion on the right side which settled with parenteral antibiotic. Patient was discharged on 14 POD.

Follow up period

There is no biliary complication. Recent images show no recurrence so far. Now he is in fifth post operative month.

DISCUSSION

Unlike liver resection, no touch isolation technique in recipient hepactectomy requires clamping and declamping of IVC and portal vein. The team was well aware of the adverse effects like blood pressure fluctuation, renal venous hypertension, ischemic reperfusion injury, gut edema and increased bleeding from the raw surfaces.

On the other hand, the size and the proximal location of the tumour to IVC reminded us that the chance of tumour emboli escaping to the heart was high unless the vascular control was applied first. Moreover, the condition of the patient being 44 and Child A, and the lack of comorbid disease inspired the team. But the surgeons had to make agreement with the anaesthesia team to find a way to declamp whenever they insist.

Fortunately, there was no extra ordinary intraoperative and post operative complication happened and although it is too soon to rule out recurrence and tumour metastasis, recent imagings so far up to five month show no sign yet.

month.

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Ethical statement: Patients consent received in written to present this paper in conference including photographs.

Conflict of interest : There was no conflict of interest.