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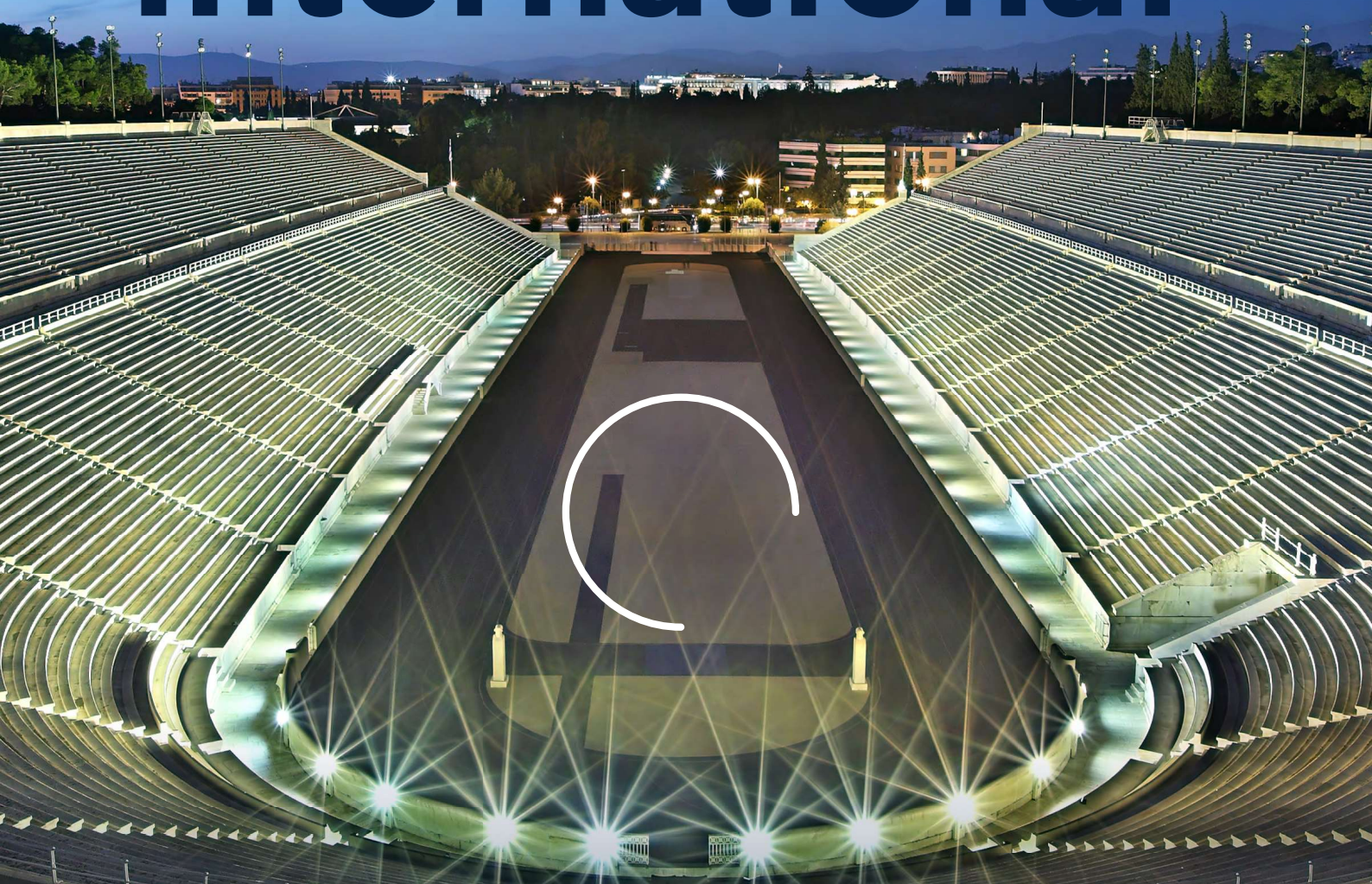

21st Congress of the European Society for Organ Transplantation

17 September - 20 September 2023. Athens, Greece

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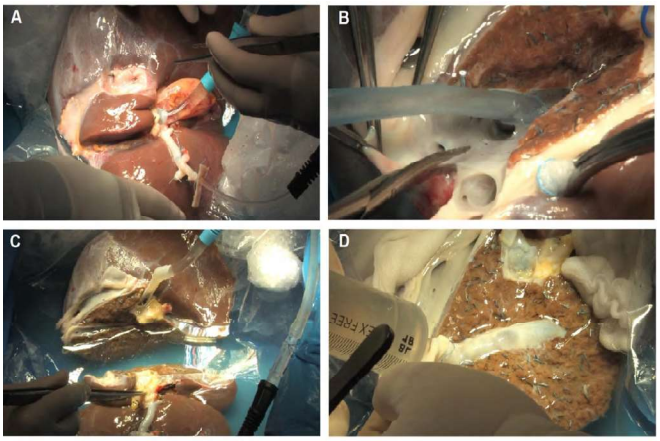
BOS16_8 FULL-LEFT/FULL-RIGHT LIVER SPLITTING WITH MIDDLE HEPATIC VEIN AND CAVAL PARTITION DURING DUAL HYPOTHERMIC OXYGENATED MACHINE PERFUSION

Alessandro Furlanetto*[1], Enrico Gringeri[1], Nicola Canitano[1], Domenico Bassi[1], Francesco Enrico D'amico[1], Riccardo Boetto[1], Andrea Lauterio[2], Luciano De Carlis[2], Umberto Cillo[1]

[1]Department of Surgical, Oncological, and Gastroenterological Sciences, Hepatobiliary Surgery and Liver Transplantation Unit, Padua University Hospital,, Padua, Italy, [2]ASST Grande Ospedale Metropolitano Niguarda, Milan, Italy

Background: Split liver transplantation is a useful mean to reduce organ shortage and waitlist mortality, but requires logistical efforts and relevant surgical expertise. We hereby describe a novel technique of full-left/full-right (FLG/FRG) liver splitting, with concomitant splitting and reconstruction of the vena cava and middle hepatic vein (MHV), with the aid of dual arterial and portal hypothermic oxygenated machine perfusion (D-HOPE, Fig A), in order to reduce cold ischemia (CIT) and ischemia-reperfusion injury.
Methods: The donor was a 22-year-old with no comorbidities. The recipient for the FLG was a 7-year-old boy affected by methylmalonic acidemia and chronic kidney disease, requiring liver – kidney transplantation. The FRG went to a 64-year-old woman with HCC on HBV-related cirrhosis. Ex-situ splitting allowed to perform a complete partition of the graft and of his outflow (Fig C), as previously described by Broering, thus allowing for optimal venous drainage of both grafts. Portal vein and hepatic artery were dissected to the bifurcation. Parenchymal transection was performed with scissors and cavitron ultrasound surgical aspirator using the MHV as a landmark. The vena cava and MHV were split in two (Fig B) and then reconstructed with donor's iliac vein patch (Fig D).
Results: The splitting procedure, during which the graft was constantly perfused both through the portal vein and celiac trunk (D-HOPE time), lasted 94 minutes, while the single-vessel perfusion time during reconstruction phases lasted 58 minutes for the FLG (artery only) and 173 minutes for the FRG (portal vein only). Flow parameters and perfusate temperature remained stable throughout all the splitting procedure, although significant changes occured when grafts were separated. Both grafts were implanted with piggy-back technique and termino-terminal portal, arterial and biliary anastomosis. The pediatric patient also received single kidney transplantation
Conclusions: This approach offers several advantages: a) the prolonging of CIT is counterbalanced by the positive effect of HOPE on graft's viability; b) reconstructions may be performed during cold storage, thus reducing warm ischemia c) it avoids extremely skilled surgeons to reach the donor's hospital, with consequent positive logistical drawbacks



BOS16_9 CLAMSHELL VERSUS BILATERAL ANTEROLATERAL THORACOTOMY FOR DOUBLE LUNG TRANSPLANTATION: IMPACT ONFUNCTIONAL AND CLINICAL OUTCOMES

Alessandro Palleschi*[1], Antonella Lo Mauro[2], Emilia Privitera[1], Giovanni Caffarena[3], Valeria Musso[3], Letizia Corinna Morlacchi[1], Valeria Rossetti[1], Rosaria Carrinola[1], Valentina Vaira[3], Davide Tosi[1], Mario Nosotti[1]

[1]Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, Milan, Italy, [2]Politecnico, Milan, Italy, [3]University of Milan, Milan, Italy

Background: The bilateral anterolateral thoracotomy with sternum sparing is considered the approach of choice for bilateral lung transplantation, mainly for the reported lower rate of sternal complications and better respiratory function in the early postoperative period compared to the clamshell incision. We report the influence of the incision on functional outcomes within one-year follow up and late clinical outcomes.
Methods: We collected data from 144 double lung transplantations between 2015 and October 2021 (85 cystic fibrosis, 46 interstitial lung diseases, 12 COPD, 1 pulmonary vascular disease). We retrospectively analysed relevant clinical variables as well as the spirometry performed before (pre), one month (1 m), 6 months (6 m) and one year (12 m) after the transplantation. Forced vital capacity (FVC) and forced expiratory volume in the 1 second (FEV1) were considered as percentage predicted.
Results: The majority of patients received clamshell incision (CLA 71.5%, n=103; BAT 28.5% n=41). Age was similar between the clamshell (median 36 years) and the bilateral anterolateral thoracotomy (median 39 years, p=0.626) groups, while the former was characterized by higher LAS (median 41.1 vs median 37.9, p=0.019). Both FVC and FEV1 were similar between the two groups before surgery, but they became systematically lower in the clamshell group in the four considered follow-ups (Figure 1). On the contrary, we found no correlation with the onset of chronic rejection.
Conclusions: The clamshell incision results in more postoperative lung restriction as compared with bilateral anterolateral thoracotomy and this effect persists throughout the first year. However, of note, this condition does not appear to have an impact on rejection incidence and survival rates.

Figure 1.