Comment on Experience With Establishing a Robotic Donor Hepatectomy Program for Pediatric Liver Transplantation

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We read with great interest and enthusiasm the article by Rela et al[1] from Chennai, India, entitled "Experience in establishing a robotic donor hepatectomy program for pediatric liver transplantation," published in Transplantation, which received a constructive guest comment, but also a very pragmatic one by the transplant team from the University of California, San Francisco.[2]

We commend the high level of organization, the structure and all the measures such as simulator training, the 3-h limit of robotic procedure in the first cases, and also the establishment of a contingency plan implemented during the introduction of the robotic approach in their pediatric living donor liver transplantation (PLDLT) scenario. It is worth highlighting the competence of the team with >10 y of experience together, which has undoubtedly contributed to their success.[1] We would like to participate in the debate by contributing some insights from our PLDLT program at the Cliniques Universitaires Saint-Luc in Brussels with currently >500 living donation (LD) procedures. Despite stating that there were no adverse events in recipients related to the robotic approach, the Indian authors reported 1 case in which the use of the triple-clamp robotic line resulted in a shortening of the length of the left hepatic vein, which required a venous extension. This prompted them to start using the laparoscopic stapler and dividing the left phrenic vein to obtain a longer left hepatic vein in subsequent cases. This parallels the 9 intraoperative adverse events (iAEs), described in our series of 438 open left hepatic resections for PLDLT. iAEs were defined as any deviation from the planned operative course, which could have put the donor and/or recipient at risk if not recognized and treated in time.[3] All the iAEs led us to further modify our perioperative surgical protocol, in the same way that they have described it.[1] We believe that iAEs are underreported in the context of LD and their reporting could be used as a safety tool to improve donor surgical protocols and for series comparison purposes. Regarding the complications, the Indian team reported that 16 patients (21.33%) developed a minor Clavien complication (≤IIIb), comparable to previously published series of LD left liver resection with laparotomy approach.[4] It is worth highlighting the incidence of 4 biliary complications (5%), all with favorable evolution. However, its appearance should be a reminder that robotic surgeons should pay attention to an adequate evaluation of intrahepatic biliary anatomy. In line with the University of California, San Francisco, team's comment about the putative universal use of the robotic approach in LD, which could be affected by the stringency of the credentialing pathway in the United States, we are also concerned about the additional workload and manpower required to implement a safe robotic LD program.[2] The Chennai team structure (senior surgeons, residents, scrub nurses, and circulators) is rather difficult, if not impossible to replicate here in Europe, where, in addition, to the stricter labor regulation, there is an immense nursing shortage and a high turnover rate, which may considerably impacts the team cohesion and interaction. As well, the number of residents is reduced and their weekly working time is regulated by law. Furthermore, institutional support is not comparable to that in Chennai and other centers in the Middle East and Asia.[5,6] Furthermore, LDLT activity is limited in Europe, with few centers having a significant number of cases per year, which could prolong the time to achieve mastery of robotic LD procedures. Although robotic is a very innovative and a highly groundbreaking approach to LD hepatectomy, the reality in Europe is all these challenges must be first addressed to pave the way for a safe robotic LD program.

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