Pure laparoscopic donor hepatectomy: Sharing experiences for the next generation

Laparoscopic liver surgery (LLS) has widely been used in different liver diseases. Recently, the indications for LLS has expanded from minor liver resections to living donors with acceptable outcomes (1,2). LLS has the advantages of faster recovery and better wound satisfaction than conventional surgery (3,4). Since the first successful LDLT of a left lateral section graft by laparoscopy in 2002 (5), the indications for pure laparoscopic donor hepatectomy (PLDH) have been extended to various grafts including the right liver (6). Several transplant centers have tried to proceed with PLDH, but donor safety and learning curve issues of laparoscopic donor hepatectomy would be an obstacle to start a new technique. Nevertheless, attempts to expand donor indication of PLDH have continued, such as reports of successful laparoscopic surgery in donors with anatomical variations at highly specialized centers (7,8). As an expert panel meeting of PLDH announced in 2018, laparoscopic donor surgery has been considered as a challenging procedure and recommended only to the surgeons with both numerous laparoscopic hepatectomy and open donor surgery (9). However, for young surgeons who have used laparoscopy as a training tool early on, these statements may make them feel frustrated. Recently, the trainee can perform laparoscopic appendectomy without the experience of open appendectomy. A laparoscopic approach is no longer a novel innovation, but a tool accessible to all surgeons. We all agree that donor hepatectomy is indeed more difficult and challenging than other surgery. However, we also need to acknowledge that there are a lot of differences between open donor and PLDH. As the experience of PLDH accumulated, standardization of PLDH is being achieved in some centers. Donors, unlike cirrhosis patients, are easier to standardize a surgical procedure because the liver parenchyma is relatively soft and well dissected from surrounding tissues. Therefore, it is time to share the accumulated knowledge and protocols of PLDH with young surgeons without numerous experiences in open donor hepatectomy as well as laparoscopic hepatectomy.

The learning curves of pioneers who tried PLDH for the first time and the learning curves of young surgeons who learned through this standardized procedure must be different. Of course, we need experience in open donor surgery to solve various problems that can occur during laparoscopic surgery. However, this fact alone is not correct to prevent the entry of laparoscopic liver donor surgery.

We have been pioneering and trying to develop pure laparoscopic donor hepatectomy. Now is the time to put together our tips and know-how for the training of laparoscopic liver donor surgery for the next generation. The series "Pure Laparoscopic Donor Hepatectomy" aims to present a comprehensive review of the history to the current status and consensus on the experiences of the current laparoscopic donor surgeons. The history of laparoscopic surgery, various surgical techniques of experts, tips of energy devices and CUSA manipulation during surgery and learning curve issues are all summarized. These issues would be a good guide for young HBP surgeons who will lead pure laparoscopic donor hepatectomy in the future.

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Footnote

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