Overcoming the learning curve in laparoscopic donor hepatectomies – The Singaporean experience

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Background
Laparoscopic donor left lateral sectionectomy (LLLS) has become the standard of care in many liver transplant programs. There is a significant learning curve required before LLLS can be performed. The National University Hospital (NUH), Singapore performed the first LLLS in Singapore in November 2017.

Methodology
A prospective series of laparoscopic donor LLS from November 2017 to June 2018 was collected and analysed. Retrospective data on all laparoscopic hepatectomies and liver transplants was also reviewed.

Results

• Prior to the first LLLS, our centre had performed 379 liver transplants, of which 244 (64.4%) were adult recipients and 135 (35.6%) were pediatric recipients.

• Experience with laparoscopic hepatectomies was 173 cases, of which 38 (22%) were minor resections, the overall conversion rate was 12.3%.

• Three cases of LLLS were performed during the mentioned period.

• The median donor total liver volume was 1002 (865 – 1144) mls and the graft volume was 205 (133 – 312) mls as measured on CT volumetry.

• Median operative time was 377 (286 – 454) minutes with an estimated blood loss of 300 (100 – 300) mls.

• In one case intra-operative graft reduction was performed.

• Median graft weight was 210 (130 – 307) g, with the graft to recipient weight ratio of 2.47 (1.7 – 3.7) %.

• One donor required post-operative blood transfusions for an intra-abdominal hematoma which was managed conservatively.

• Median length of stay was 6 (5 – 7) days and all donors are well.

Conclusion
LLLS is a technically demanding procedure with a significant learning curve. It is possible to scale the learning curve in a small – medium liver transplant program with adequate laparoscopic experience.