Summary and Conclusion

From 1967, when Thomas E Starzel performed the first successful liver transplantation until now, the field of liver transplantation has undergone remarkable advances. The combination of improvements in rejection rates and in surgical technique led to an enormous expansion of the field.

Liver transplantation is the most effective method in treatment of end stage liver disease. According to the study, one and five patient and graft survival are (96%-87.7%) and (80%-67.4%) respectively.

Recipient complications which are directly or indirectly caused by surgical factors are procurement injury of the graft, intraoperative hemorrhage, primary graft non-function, biliary complications, vascular complications (stenosis or thrombosis) affecting hepatic artery, portal vein, inferior vena cava and hepatic veins, wound complications, incisional hernias, post-transplant infections, neuropsychiatric complications and disturbed quality of life, in addition to iatrogenic injuries of portahepatis structures, bowel, other organs or great vessels that increase morbidity on the patients. Our incidence of potentially or actually life-threatening complications (i.e. ≥ Clavien score III) 72% in cadaveric and 88% in LDLT respectively.

Biliary complications are the most common technical complications including leakage and strictures. On the other hand, vascular complications especially hepatic artery thrombosis are the most serious as they lead to graft loss in the early postoperative period. Early detection and treatment is paramount important for graft salvage.

Standardization of hepatectomy and implantation and refinement of techniques, dissection, hemostasis and anastomosis with adequate adjustments in case of technical difficulties and preoperative recognition of risk factors are a must for favorable outcomes. At the same time, detailed knowledge of vascular and biliary anomalies is very important for transplant surgeons as they are commonly encountered. For example, Duct to duct anastomosis without a T-tube or Roux-en-Y bilioenteric anastomosis is recommended to avoid biliary complications.
The number of cadaveric liver transplantation is far more than living donor in the USA due to advanced united network of organ sharing UNOS system and availability of cadaveric organs. On the other hand, LDLT is the only technique in some countries including Egypt. LDLT is associated with more technical complications than cadaveric and donor safety is an important concern.

For donor safety in LDLT, strict guidelines of selection and his free informed consent as well as evaluation and follow up must deserve extensive interdisciplinary discussion on national and international base. Laparoscopic donor hepatectomy is a new advent in the field of LDLT and, according to the study; it leads to reduction of postoperative donor hospital stay. Innovation in the surgical technique and researches in liver regeneration and factors controlling it must continue and further efforts should be directed towards development of cadaveric liver transplantation in countries lacking this program.

Further recommended studies should include larger samples of data, with meta-analysis in many liver transplant centers of preoperative and operative parameters and liver transplant complications. It is recommended to use Clavien score 5-tire grading system of surgical complications that classify them into serious (III, IV and V) and no serious (I and II), in order to monitor liver transplant technical complications of recipients and donors for further evaluations.