

Role of hand-assisted laparoscopic surgery (HALS) for living donor right lobe harvest

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Background and Purpose

Next to donor safety, the cosmetic aspect of abdominal incisions is the matter of concern for both liver living donors and surgeons. Various shapes of skin incisions have been performed for living donor hepatectomy to enhance wound cosmetics. We performed a prospective comparative study on mini-laparotomy for right lobe graft harvest with and without HALS.

Methods

Thin young donors were indicated for mini-laparotomy with or without HALS. In non-HALS group (n=20), a 12cm-long right subcostal incision was applied for right lobe graft harvest. In HALS group (n=20), an 8cm-sized right subcostal incision was applied for hand assistance and 3 laparoscopic holes are made for manipulation. The retrohepatic inferior vena cava (IVC) was initially dissected laparoscopically under air inflation. The skin incision was extended to 11cm, and then hilar dissection and hepatic transaction were performed through the skin incision.

Results

In this series of all 40 cases, safe harvest of the right lobe grafts was successfully achieved through mini-laparotomy incisions. HALS group required additional 30 minutes for laparoscopic preparation and dissection than non-HALS group. Dissection of the retrohepatic IVC without HALS was demanding due to poor operative view and excessive liver traction. HALS facilitated retrohepatic IVC dissection, but the remaining part of surgery was also demanding due to poor operative view. Wearing a head lamp was essential for lightening of the deep area. The minimal skin incision for delivery of liver from the abdomen was average 11cm for graft <600g and 12cm for graft >600-800g.

Conclusions

HALS facilitated retrohepatic IVC dissection, leading to no necessity for excessive liver retraction. Although donor hepatectomy through a minimal skin incision appears to be demanding for donor surgeons, wound cosmetics are much enhanced, thus being worthy of performance especially in young female donors.