MHARLN surgical procedures: This section describes the retroperitoneoscopic approach to building a working channel that uses the 3-port distribution and technique as previously reported by Chen (1). Once a minimally invasive working channel has been established, we first used minimally invasive devices to remove retroperitoneal fat to create a relatively large working space, and then isolated perirenal adhesion tissues as much as possible. Severe fibrotic adhesions are often encountered in these types of patients, and nearly all such dissections are very difficult, even for experienced surgeons. It is unlikely that a pure laparoscopy could accomplish this dissection task. At this stage, the MHARLN was changed to continue the operation.

After closing the pneumoperitoneum, we made a mini-open muscle-splitting incision of approximately 8 cm close to the inguinal canal. The fascia layer was incised lateral to the rectus abdominus, and then dissected using fingers to tunnel from the muscle fibers to the transilluminated retroperitoneum. Confirmation was then obtained that the correct operating space had been entered by the injected gas gushing out (2). Next, the surgeon's hand was inserted into the retroperitoneal cavity through this incision directly without the use of hand-assisted devices. A tight space between the wrist and abdominal wall was formed and the pneumoretroperitoneum was established again. If the incision leaked, tissue forceps or saline gauzes were used to seal the incision. With the help of tactile feedback and laparoscopy, a blunt and sharp dissection were combined to separate the adhesion tissues around the kidney and fully expose the hilar vessels. Hem-o-lok clips were then used to ligate renal hilar vessels, lymphatic vessels, and ureters under laparoscopy. The renal specimen was then removed through the hand-assisted incision without additional injury. If no obvious bleeding was observed in the operative field, a 22-French abdominal drainage tube was placed in the renal fossa, and the modified hand-assisted incision and puncture point were closed by layer sutures.

References

1. Chen Z, Xie JL, Zhou C, et al. Technical modifications of hand-assisted retroperitoneoscopic living donor nephrectomy: a single-center experience. Transplant Proc 2012;44:1218-21.
2. Capolicchio JP, Feifer A, Plante MK, et al. Retroperitoneoscopic living donor nephrectomy: initial experience with a unique hand-assisted approach. Clin Transplant 2011;25:352-9.

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