33 Hybrid LESS Ne (laparo-endoscopic single-site surgery nephrectomy with accessory port), when, why and how

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Introduction & Objectives: Laparoendoscopic single-site surgery has been developed in attempt to further reduce the morbidity and scarring associated with surgical intervention. The procedure requires a high level of skills in laparoscopic surgery. An accessory port is necessary in some cases. We present our experience with this technique.

Materials & Methods: LESS Ne is indicated at our institution in patients with a BMI < 33 kg/m. We started in 8/2011. Until 2/2019, we performed 169 LESS Ne (33.5 % of all laparoscopic nephrectomies), 94 for neoplasms and 75 for non-neoplastic aetiology). Thirteen (7.6%) were by pararectal incision, the rest by transumbilical approach. A total of 58 men and 111 women, 85 left, 77 right, (4.1%) on both sides. First 54 (31%) using Quadport + ®, others GelPoint®. We employ a rigid laparoscopic camera 10 mm 15° and only two working instruments at the same moment- one standard straight instrument – mainly a sealing device, and one prebent / straight grasper(Quadport + ®/ GelPoint®). The hilar vessels we divide by two methods: 1) EndoGIA™stapler en bloc. 2) Renal artery and then vein is liberated and divided with plastic clips with lock (Hem-o-lok®Weck, Teleflex, size L). After that, the ureter is cut and the whole kidney is mobilized with sealing device. The specimens with malignancy is placed in the 15-mm Endo Catch bag® in others we don´t use bag. Port is removed and minilaparotomy is extended to facilitate removing the specimen from the abdominal cavity. Minilaparotomy is closed without insertion of a drain.

Results: The time of surgery was 86.4 ± 35.1 (28-230) min, bilateral 102 ± 14.4 (86-124) min, hospital stay 5.9±4.8 (2-40) days. The accessory port is used in 20% (34) - 15% (5/34) on the left, 85%(29/34) on the right. The mean operation time was 68 min vs. 75 min (Student's t-test, p=0.045), BMI 30.4 kg/m2 vs. 27.2 kg/m2 (p=0.038), blood loss 33.7 vs. 39.2 ml in comparision series without port . Weight of the specimen was 220g vs. 172 g (p<0.05). The technique of hilum division was without statistical significance. In 10/34 cases with patients BMI 22.3 ± 4.1 kg/m2 we use a 3 mm grasper inserted directly through the abdominal wall (without trocar) in the hypochondrium close to the end of the 12th rib with previous opening of the peritoneum with 3 mm scissors, in the others we used 5 mm trocar and grasper to elevate the liver (21/34) or spleen (3/34). In 6 cases we converted procedure to standard laparoscopy. Complications occurred in 4.7% (8/169) Clavien (Cl) I 3 x: wound infection, Cl II 2x: acceleration of hypertension, Cl 3b 2x: small bowel injury, spleen injury Cl 4a 1x: CPR for lung embolism.

Conclusions: LESS Ne is safe procedure. Accessory port is needed more often on the right side surgery for liver elevation but is possible to use 3 mm instrument without trocar in slim person. And it is needed more often in overweight person.