The First Laparoendoscopic Single-Site Surgery (LESS) for Endometrial Cancer in Siriraj Hospital

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ABSTRACT

A 70-year-old woman presented with post-menopausal bleeding. She underwent laparoendoscopic single-site surgery (LESS) for hysterectomy, bilateral salpingo-oophorectomy (BSO), peritoneal washing for cytology, and bilateral pelvic lymph node dissection (BPND). The pathology revealed stage IB, grade I endometrioid adenocarcinoma. She received vaginal brachytherapy postoperatively.

Keywords: Laparoendoscopic single-site surgery; endometrial cancer (Siriraj Med J 2017;69: 147-150)

INTRODUCTION

Minimally invasive surgery has played an important role in many benign and malignant gynecological diseases during the past two decades. The advantages of laparoscopy include decreased postoperative pain, a more rapid return to normal activities, fewer wound complications, and a low incidence of postoperative adhesion.

We performed the first total laparoscopic hysterectomy (TLH) in Siriraj Hospital in 2004.[1] We subsequently undertook the first laparoendoscopic single-site surgery (LESS) TLH for myoma uteri in March 2015. Therefore, the present report showed the safety and feasibility of LESS in the complicated gynecologic surgery.

CASE REPORT

A 70-year-old, Thai woman presented with post-menopausal bleeding for one month. Her past medical history included well-controlled hypertension and diabetes mellitus. She had no family history of gynecologic malignancies. She underwent fractional curettage from another hospital. The result demonstrated the benign endocervical strips and grade I endometrioid adenocarcinoma associated with atypical complex endometrial hyperplasia. Tubal resection was the only previous surgery. Her body mass index was 34.7 kg/m^2. The pelvic examination showed a normal cervix. The uterus was enlarged about 10 week pregnancy size. No abnormal adnexal mass was detected. We decided to perform LESS for surgical staging. The patient performed the operation in May 2016. The procedure included TLH, BSO, peritoneal washing for cytology. BPND and para-aortic lymph node sampling (PANS) were the optional operations according to the patient risk factors.[2]

MATERIALS AND METHODS

We performed LESS TLH with the 10-step Siriraj TLH technique. The principles of this technique include early identification of both ureters at the beginning of surgery, dissection of the ureter and uterine artery in the retroperitoneal space, ligation or bipolar cauterization of the uterine artery at its origin, and then restoration of the pelvic anatomy from the adhesion-free area to the adhesion area.

Laparoscopic procedure was performed under general anesthesia with the patient in the lithotomy position. A sound-tenaculum uterine manipulator was placed through the cervix. Bladder drainage was established by insertion

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of a 12-French Foley catheter. A single 2.5 centimeters vertical umbilical incision was made through abdominal cavity. The Alexis®wound retractor with glove was used to maintain pneumoperitoneum during operation. The instruments included Enseal®G2 Articulating Tissue Sealers (Ethicon Endosurgery, Guaynabo, PR) and SIL™ Hand Instruments (Covidien®, Manfield, MA) were adopted.

Fig 1. showed the intraoperative findings. The symmetrically enlarged globular uterus was seen. The total uterine weight was 210 grams. Both adnexa were unremarkable. Extrauterine invasion was not suspected. The operation began with peritoneal washing for cytology. The 10-step Siriraj technique include (i) the round ligament was bipolar cauterized and cut downward to the vesicouterine peritoneum. (ii) The bladder was dissected from the lower uterine segment. (iii) The posterior broad ligament was cut along the infundibulopelvic (IP) ligament. A retroperitoneal space, such as a pararectal or paravesical space, was created. (iv) The ureter was identified early and ureterolysis was undertaken from the posterior leaf of the broad ligament in pararectal space. (v) The uterine artery was isolated and ligated or cauterized. (vi) IP ligament was bipolarly cauterized and cut. The same procedure was performed on the other side. (vii) The blood supply of the uterus was ligated. In the case of severe pelvic adhesion, the restoration of pelvic anatomy began from the adhesion-free area (retroperitoneal space such as Okabayashi pararectal or rectovaginal space) to adhesion area. (viii) Both cardinal ligaments and uterosacral ligaments were bipolarly cauterized and cut. (ix) Vaginal tube was inserted. Colpotomy was performed. (x) The vaginal vault was sutured. In our case, the uterus and both adnexa were removed through the vagina without morcellation. Because of the difficult exposition, the vaginal vault was sutured vaginally with no. 0 Vicryl.

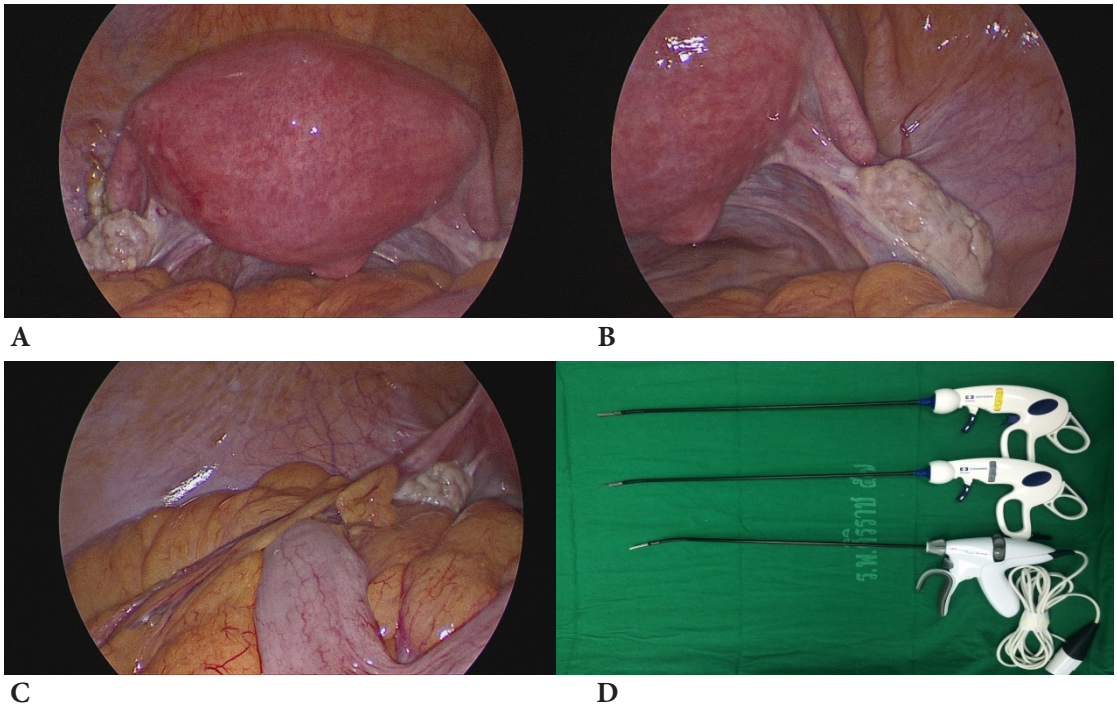
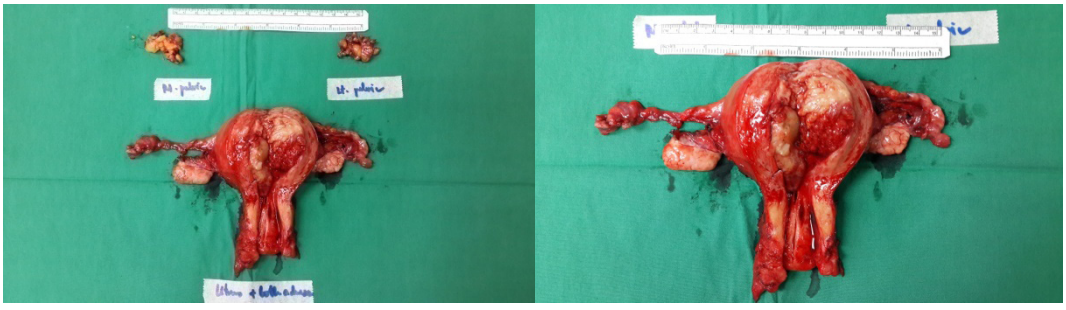


Fig 1. A)The uterine size was 12 weeks pregnant. There was no extrauterine metastasis. B and C)Both ovaries were atrophy. D)The instruments included Enseal®G2 Articulating Tissue Sealers (below) and SILTM Hand Instruments

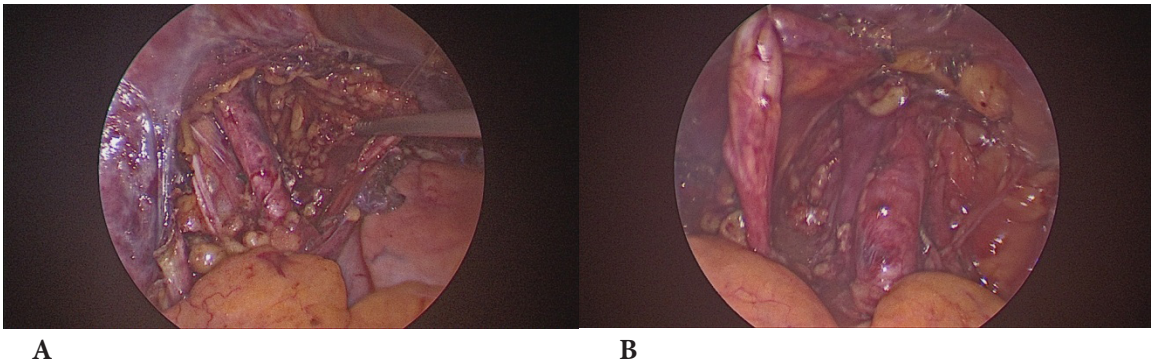
RESULTS

There was a fragile yellowish tumor in the uterine cavity. The tumor was 4 centimeters in size. Myometrial invasion was limited to the outer half of myometrium as shown in Fig 2. BPND was achieved by LESS as shown in Fig 3. The total of 12 pelvic lymph nodes were retrieved, with 6 lymph nodes from each side. Due to her obesity and inadequate space to perform the procedure, PANS was abandoned. The total operative time was 310 minutes. Total blood loss was 120 milliliters. Postoperative period was uneventful. Fig 4. revealed the surgical wound postoperatively. The pathology revealed stage IB, grade I endometrioid adenocarcinoma. She received vaginal brachytherapy postoperatively. Pain score was 1, 1/10 at 24, 48 hours postoperatively. Patient satisfaction was excellent.



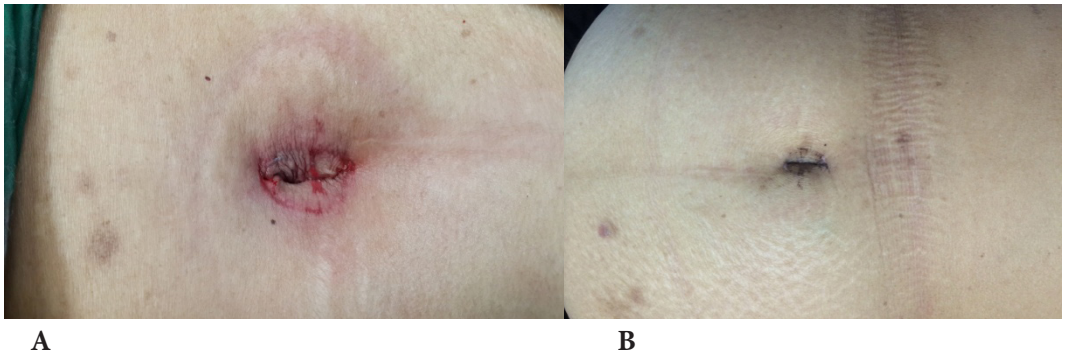
A B

Fig 2. A and B Gross photography of the specimen showing a friable yellowish tumor in the uterine cavity.No grossly cervical and adnexal involvement was detected. Both pelvic lymph nodes were not enlarged.



A B

Fig 3. During laparoendoscopic single-site bilateralpelvic lymph node dissection on left side (A) and right side (B).



A B

Fig 4. Immediate post-operative surgical wound (A) and post-operative day 7 (B).

DISCUSSION

In the last decade, several authors[3-6] have demonstrated that laparoscopic approach for early stage endometrial cancer is feasible and safe. A meta-analysis of randomized controlled trials showed no significant difference between laparoscopic and laparotomic approaches in overall survival, disease-free survival and cancer-related survival.[7] Significantly longer operative time, lower intraoperative blood loss and postoperative complications were related with laparoscopy. Pelvic and para-aortic lymph nodes yield, and intraopertaive complications were comparable between the two groups.[8] Therefore, laparoscopic surgery should be another option to treat patients with endometrial cancer.

The 10-step Siriraj technique was designed to reduce the rate of internal organ injuries and intraoperative blood loss. We believe that early identification of the ureters and routine ureteral dissection will decrease the rate of ureteric injury. Moreover, the uterine artery ligation will reduce blood loss. Hence, we performed LESS TLH with this technique. However, limitations of LESS should be noted. These disadvantages include loss of triangulation, instrument crowding/collision, difficulty with tissue manipulation, poor ergonomics, and need for advanced laparoscopic skill. Kolkman et al.,[9] suggested that 15-20 cases are required to guarantee competency and 30-50 cases are required to master a specific procedure. We believe that operative times and surgical expertise will

continue to improve with the performance of more cases.

Furthermore, several studies[10-12] reported that more complicated procedures such as pelvic and para-aortic lymphadenectomy were feasible and safe with LESS technique. The advantages of LESS include superior cosmesis, less postoperative wound complications, and faster recovery periods.[13] Park et al.,[14] demonstrated that LESS was associated with less postoperative pain and analgesic requirements. LESS was comparable to conventional laparoscopic surgical staging in perioperative outcomes including lymph node retrieval. Zapardielet al.,[15] concluded that LESS surgical staging for endometrial cancer is a feasible procedure, even when the procedure included a para-aortic lymph node dissection. Compared with the previous study,[12,14,15] we performed the operation with longer operative time. However, pelvic lymph node retrieval and estimated blood loss were comparable. In our case, LESS PANS was discarded because the exposition was limited. We hope that in the future when we have more dexterity, the LESS extraperitonealpara-aortic lymphadenectomy will resolve this limitation.

CONCLUSION

We believe that LESS for endometrial cancer is safe, feasible, reproducible, and effective. The good surgical skills are essential for this technique.

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