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Instruments and Techniques

More With LESS: A Novel Report of Nerve Sparing Radical Hysterectomy Performed Using LESS

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ABSTRACT Laparoendoscopic single-site surgery (LESS) and natural orifice translumenal endoscopic surgery are now being used in gynecologic oncologic procedures. We used our expertise with LESS to perform nerve-sparing laparoscopic radical hysterectomy. A 45-year-old woman with stage IA2 cervical cancer was referred to us. The biopsy specimen showed grade II invasive keratinizing squamous cell carcinoma. We duplicated the steps of our laparoscopic nerve-sparing radical hysterectomy procedure to perform a nerve-sparing radical hysterectomy via LESS using conventional ports and instruments. Oncologic clearance was comparable to that in conventional laparoscopic radical hysterectomy. Bladder function recovered completely after removal of the Foley catheter. Nerve-sparing laparoscopic radical hysterectomy using fewer ports is technically feasible. The oncologic clearance and functional results are comparable to those in the multiport variant. Journal of Minimally Invasive Gynecology (2013) 20, 886–890 © 2013 AAGL. All rights reserved.

Keywords: Cervical cancer; Laparoscopy; LESS; Single-incision surgery

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Advanced minimally invasive gynecologic procedures have become more popular worldwide. With improvements in technology, surgeons are finding newer methods to perform scarless surgical procedures. Thus, laparoendoscopic single-site surgery (LESS) and natural orifice translumenal endoscopic surgery have emerged as excellent alternatives to open as well as conventional laparoscopic procedures [1–7].The potential advantages are esthetically improved scar, faster postoperative recovery, and decreased pain. Applications for LESS are expanding, and the technique is being used to perform gynecologic oncologic procedures [8].

A number of innovations have been used to facilitate scarless procedures, for example, the Uni-X single-port access laparoscopic system (Pnavel Systems, Morganville, NJ) [2], the R-Port TriPort System (Advanced Surgical Concepts, Ltd., Bray, Wicklow County, Ireland) [3], and the SILS single-port system (Covidien, Mansfield, MA) [9]. Although the specialized ports enable easier single-site surgery, they add to the cost and are not readily available. The most common complication of radical hysterectomy performed via open surgery or laparoscopically via multiple ports or fewer ports is bladder dysfunction, primarily due to damage to the autonomic nerves [10–13]. To overcome this complication, we began to perform laparoscopic nerve-sparing radical hysterectomy [14–24], with natural evolution to nerve-sparing radical hysterectomy using LESS. Herein is presented a novel technique for nerve-sparing radical hysterectomy that incorporates all of the benefits of LESS and results in good functional outcome.

Case Report

A 45-year-old woman with stage IA2 cervical cancer was referred to us. A biopsy specimen showed grade II invasive

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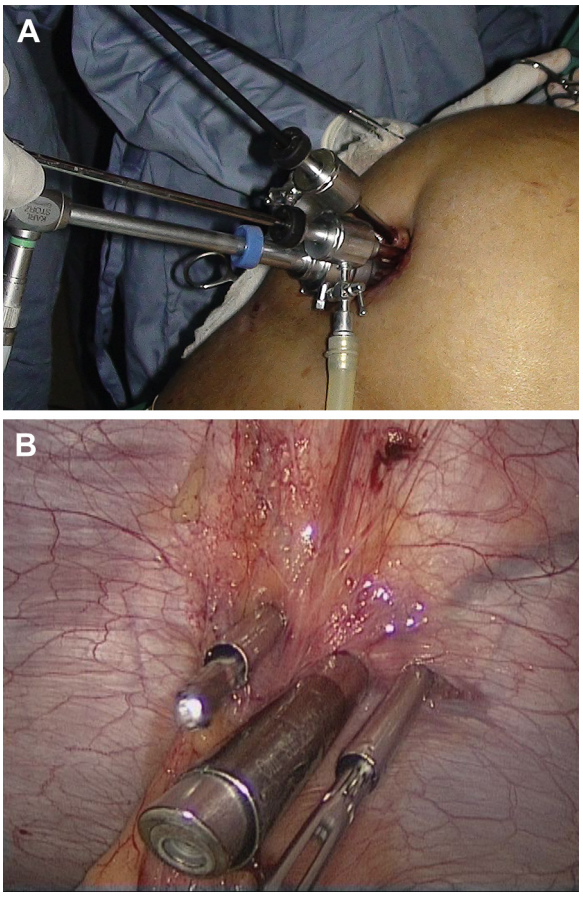
Fig. 1

Surgeon and the assistant's position.

Fig. 2

Port position, external view **(A)**, and port position, internal view **(B)**.



keratinizing squamous cell carcinoma. Preoperative ultrasound and computerized tomography were performed to confirm the staging of the tumor. The patient had body mass index of 22, no history of having undergone surgery, and uterine size 6 weeks.

Procedure

A combination of general and spinal anesthetic was administered, and the patient was placed in a modified Lloyd-Davies position [10]. No vaginal manipulator was used. The operating surgeon stood at the head of the patient. The assistant held the camera from the left side (Fig. 1). Pneumoperitoneum was created using a Veress needle through the Palmer point. A primary 10-mm port was inserted through the umbilicus, and a 0-degree telescope was introduced through this port. Two 5-mm trocars were introduced on either side of the primary port, slightly caudal to the primary port (Fig. 2, A and B). The left port was used for insertion of atraumatic graspers, and the right port for the energy source, suctioning, and use of scissors [5]. The principles of laparoscopic nerve-sparing radical hysterectomy were used, as we have previously described [14].

The primary difficulty encountered in any single-site surgery is retraction of the bowels from the operative field. We used a novel technique of hitching the sigmoid colon to the abdominal wall. A polyglactin 910 (Vicryl 2-0) suture was passed from the mesentery of the sigmoid colon, and both the ends were brought out through the abdominal wall in the left lumbar region using a port-closure needle (Fig. 3). This helped to keep the sigmoid colon under traction and away from the operative field. During the remainder of the procedure, one instrument was used for traction and the other to operate with.

The right ureter was identified at the level of the sacral promontory, and the peritoneum overlying it was cut from the right infundibulopelvic ligament into the pouch of Douglas and extending to the left infundibulopelvic ligament. This is the so-called posterior U-cut. Dissection was then performed between 2 layers of the Denonvillier fascia,