

# Total Laparoscopic Hysterectomy: How to Do Safe and Successful Procedure?

Marzieh Mehrafza<sup>1,\*</sup>

<sup>1</sup>Department of Minimally Invasive Gynecologic Surgery, Ghaem International Hospital, Rasht, Guilan, Iran

\*Corresponding author: Marzieh Mehrafza, Department of Minimally Invasive Gynecologic Surgery, Ghaem International Hospital, Rasht, Guilan, Iran, E-mail: az.raoufi@gmail.com

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Hysterectomy is one of the most commonly performed surgical procedures. Laparoscopic hysterectomies have been shown to be associated with lower blood loss, shorter hospital stay and recovery time, early return to normal activity and work, fewer wound infections, less pain, and shorter operation time in experienced hand (1-4).

In spite of advantages of these minimally invasive procedures, abdominal hysterectomy remains the most common procedure.

The slow adaption of laparoscopic hysterectomy can be due to insufficient exposure and training during residency, lack of hospital equipment, and deficiency in support from colleagues (5, 6).

Steps toward a successful laparoscopic hysterectomy are as below:

1) The operating table should be kept low so that the surgeon monitors the process directly in an ergonomic working environment.

We keep arms tucked at the sides and keep patient into steep trendelenburg position during of the operation.

2) Placement of a uterine manipulator: preferably the HOHL (STORZ Company).

3) Correct abdominal entry and trocar placement: We inserted the first trocar (12 mm) through the umbilicus. The lower right and left quadrant trocar (usually 5 mm) were placed under direct vision. These trocars were placed laterally to the rectus abdominis approximately 2 cm above and 2 cm medial to the anterior superior iliac spine. As well, 8 cm above and paralleling lower left trocar site, an additional 5 mm trocar was placed.

4) At first, we ligated and cut round ligament of both side by using of 5 mm ligaSure (Covidien (Medtronic)). Then, we dissected the anterior and posterior peritoneum by using harmonic scalpel or monopolar cautery and mobilized and push down the bladder in anterior and ureter at both sides in posterior. Indeed, we describe a new approach by saving uterosacral ligament by transverse inci-

sion one centimeter above it and extending peritoneal incision at both posterolateral of uterus adjacent to utero ovarian ligament and then we push down the peritoneum at both sides. So we can prevent most uretral injury during clumping and ligating of uterine artery. In women with one or more previous cesarean delivery, this area may be scarred and it is important to stay relatively high on the uterus during the dissection. If fat is encountered, a re-assessment of the route of dissection is recommended because the fat belongs to the bladder, this may indicate that the dissection is moving too close to the bladder.

5) Then we ligated and cut the utero ovarian ligament (if we plan to save ovaries) or infundibulopelvic ligament (if we plan to remove ovaries) by using 5 mm ligaSure instrument.

6) We used a 5 mm ligaSure for ligating and cutting uterine vessels at the level of internal cervical os.

7) We save uterosacral ligament by cutting and separating the vaginal cuff about one centimeter above these ligaments by palpating the HOHL uterine elevator edges by harmonic scalped or monopolar electrocautery surgical instrument. HOHL is a uterine elevator with hard edge which elevates vaginal cuff for safe cutting its edge at the end of total laparoscopic hysterectomy. This technique also prevents ureter injury in this stage of operation.

8) Removal of the uterus: Pull the uterus inside the vagina if it fits. Enlarge uterus that cannot be removed by vaginal route, can be carefully morcellated either transvaginally by using a 10 blade scalpel or transabdominally by using an electronic morcellator.

9) Vaginal cuff closure: We used quill PDO 14 cm × 14 cm for suturing vaginal cuff via laparoscopic route. In some cases, we safely closed the vaginal cuff vaginally by using vicryl or chromic catgut. In a running fashion, to include the vaginal mucosa and the pubocervical and rectovaginal fascia. Then, we irrigated the pelvis and assured hemostasis at all pedicle sites.

10) Port site closure: The fascia at the 12 mm incision closed using 0 vicryl sutures with fascia closure device. The skin is closed with 4 - 0 monocryl or nylon suture. We can inject 20 cc of 0.5% marcaine at all incision sites to postoperative pain reduction immediately.

Cystoscopy is not a routine procedure, but in selected patients, it was performed after vaginal closure to determine the presence of signs of ureteral or bladder injury (Five minutes prior to vaginal closure, the patient is treated with 5cc of indigo carmine intravenously).

We have to know that a normal cystoscopy dose not rule out a delayed manifestation of thermal injury to either the ureter or the bladder.

#### Postoperative care:

We prescribed enough pain relief treatment and antiemetic for our patients. Patient goes home, the following day of operation or two days after, for close observation for early diagnosis of some postoperative complications that may occur. Our patients may return to their moderate activities by 2 - 3 weeks following surgery.

In summary, total laparoscopic hysterectomy is a safe and effective surgical procedure for patients who need hys-

terectomy. We do approximately 180 - 200 laparoscopic hysterectomy cases annually with rare cases of urethral, vesical, and large bowel complications.

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