

Total Laparoscopic Hysterectomy Training Course for the Symbionix LAP Mentor



Description

Hysterectomy, removal of the uterus, is the second most common major operation among women in the United States. Approximately 600,000 hysterectomies are performed yearly in the United States at a cost of nearly \$5 billion, according to the Centers for Disease Control and Prevention.

While studies indicate that many hysterectomies can safely and successfully be performed using laparoscopic techniques, the majority of these surgeries are performed abdominally through an “open” laparotomy incision. Despite laparoscopic surgery’s advantages in appropriately selected patients – less postsurgical pain, quicker recovery times and smaller scars — OB/GYN’s have lagged behind other fields in adopting this minimally-invasive approach.

There is a great need for scientifically-validated, advanced surgical simulation training that will assist practicing OB/GYN’s in the transfer of surgical skills from the “open” abdominal hysterectomy approach to the laparoscopic approach, as well as train residents and fellows in the latest techniques for laparoscopic hysterectomy.

The following training curriculum for Total Laparoscopic Hysterectomy provides repetitive practice of surgical skills required for the Total Laparoscopic Hysterectomy procedure, in a safe and reproducible environment.

The course is intended for practicing OB-GYN surgeons, as well as residents and fellows, who are familiar with basic laparoscopic skills and gynecological procedures. Refer to ‘Basic Laparoscopic Gynecology Skills and Procedures Course’ for comprehensive basic skills and basic gynecological procedure training.

Prior to participating in the hysterectomy course, the participant should demonstrate a minimal skill level for two basic laparoscopic tasks in the basic course referenced above. The required skill levels are derived from the Development of a Virtual Reality Training Curriculum for Laparoscopic Cholecystectomy (Darzi et al. British Journal of Surgery 2009; 96: 1086–1093).

In the second course component the participant performs a total laparoscopic hysterectomy procedure using the LAP Mentor simulator. Participants train in the key components of the procedure: Uterine manipulation, superior pedicle division, bladder mobilization, exposure and division of the uterine vessels and performance of a colpotomy. The course of the ureters may be visualized transperitoneally, or through a retroperitoneal dissection. Either salpingo-oophorectomy or preservation of the adnexa may be performed.

Included in this curriculum are a variety of complications and emergency situations that may occur during the key steps of the procedure including: Ureteral injuries, injury to the bladder or bowel and uterine artery bleeding. The simulation also provides the surgeon with flexibility to determine the extent of bladder mobilization, identification of the course of the ureters, and recognition of the cervico-vaginal margin during colpotomy. All the key decision points of the actual procedure are incorporated into a realistic surgical environment. The curriculum provides a complete educational solution, including videos of individual steps of the real procedure, step-by-step procedural guidance and comprehensive objective performance metrics.

This course was written in collaboration with:

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Objectives

- ◆ Demonstrate a basic skill level, using two simulated laparoscopic tasks, as determined in: Development of a Virtual Reality Training Curriculum for Laparoscopic Cholecystectomy (Darzi et al. British Journal of Surgery 2009).
- ◆ Safely perform an advanced gynecological procedure, Total Laparoscopic Hysterectomy, in a simulated environment.

Specialties

Gynecology

Target Audience

Practicing OB-GYN physicians, as well as residents and fellows, who are interested in hands-on simulation-based training for a Total Laparoscopic Hysterectomy procedure.

Assumptions

- ◆ Familiarity with basic laparoscopic skills and basic gynecological procedures.
- ◆ Participants are required to demonstrate a basic skill level, on two simulated laparoscopic tasks.

Suggested Time Length

Suitable for 2 day training courses or for distributed training.

Authors

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<http://gynlap.com/>

<http://camls-us.org/>



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AccessSurgery References:

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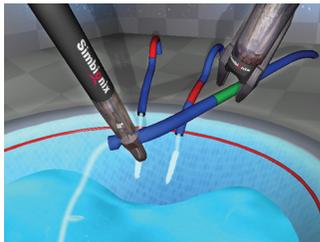
Task Descriptions and Curriculum Steps

1. Basic Tasks –Pre-Test

The participant should achieve a required skill level on two basic laparoscopic skills: Clipping and grasping and two handed maneuvers. The required skill levels for these two tasks are derived from Development of a Virtual Reality Training Curriculum for Laparoscopic Cholecystectomy (Darzi et al. British Journal of Surgery 2009; 96: 1086–1093).

Instructions:

Training is completed when all of the following skill levels are reached in two consecutive sessions. Refer to 'Basic Laparoscopic Gynecology Skills Course' for comprehensive basic skills training.



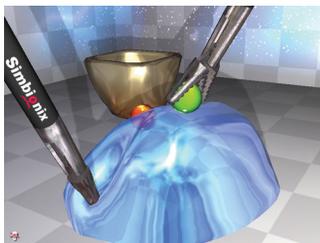
Basic Skill Module Task 5 - Clipping and Grasping

Task Description:

Safely grasp and clip leaking ducts within a specified segment, before the pool fills.

Required Skill Level

Time taken < 100 s



Task 6 - Two-Handed Maneuvers

Task Description:

Use two graspers to locate the balls within the jelly mass and then place them in the endobag.

Required Skill Level

Total time taken < 90 s

Total number of movements < 100

Total path length < 440 cm

2. Total Laparoscopic Hysterectomy

Instructions:

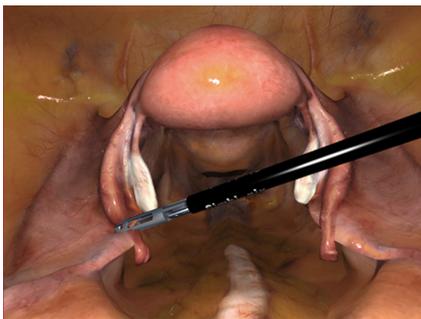
Perform a simulated Total Laparoscopic Hysterectomy procedure. Train in the key components of the procedure: Uterine manipulation, superior pedicle division, bladder mobilization, exposure and division of the uterine vessels and performance of a colpotomy.

Suturing the vaginal cuff is not included in the hysterectomy simulation. Optionally, the participant may practice suturing skills from the Basic and Advanced Suturing Modules. An example of two relevant tasks is included in the next section of the course.

Following performance of the patient case, the trainee is required to analyze his/her performance report and set personal standards for improvement.

Objectives

- ◆ To perform a thorough inspection of the abdomen and identify the course of the left and right ureters in the retroperitoneum.
- ◆ In case of Salpingo-oophorectomy – to safely coagulate and divide the round ligaments and infundibulopelvic ligaments bilaterally, manipulating the uterus and adnexa for proper visualization.
- ◆ Without Salpingo-oophorectomy – to safely coagulate and divide the round ligaments and tubo-ovarian pedicles bilaterally while manipulating the uterus for proper visualization.
- ◆ To perform adequate bladder mobilization, maintaining the correct dissection plane within the vesico-uterine peritoneal fold, and reflecting the bladder to safely expose the anterior pubocervical fascia and upper vagina.
- ◆ To create a safe distance between the ureters and the uterine vessels, by appropriate uterine manipulation.
- ◆ To perform bilateral exposure and safe division of the uterine vessels.
- ◆ To identify and circumferentially incise the cervico-vaginal margin.
- ◆ To perform an inspection of the operating field for adequate hemostasis.



Hysterectomy Case:

Medical History:

A 49-year-old Gravida 2, Para 2 woman presents to your office with complaints of worsening menorrhagia and dysmenorrhea. She was treated with multiple medications without relief of her symptoms. Her laboratory studies are unremarkable and a Papanicolaou (Pap) smear is normal. Her uterus is 6-8 weeks in size and an office endometrial biopsy was benign. Ultrasound demonstrated a normal size uterus. She does not wish to have any more children and declines any further conservative therapy options. She does not desire an endometrial ablation. A total laparoscopic hysterectomy has been scheduled for this patient.

Pathology:

6-8 week size irregular uterus consistent with adenomyosis.

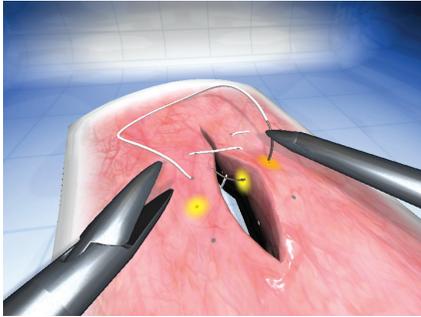
3. Further Training – Suturing Tasks

Instructions:

Suturing the vaginal cuff is not included in the hysterectomy simulation. Optionally, the participant may practice laparoscopic suturing skills using tasks from the Basic and Advanced Suturing Modules. An example of two relevant tasks is included below.

Objectives

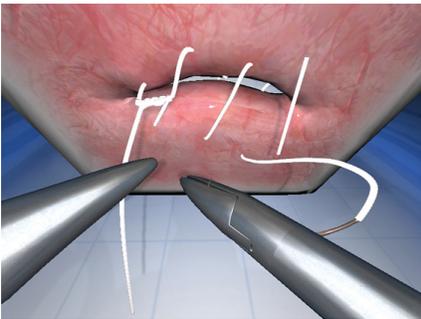
- ◆ To perform interrupted and continuous suturing.
- ◆ To practice knot tying.
- ◆ To practice suturing in difficult suture line angles as encountered in real life procedures.
- ◆ To learn how to perform anastomosis.



Basic Suturing Task 2 - Continuous Sutures

Main Goal:

Practice the principles of continuous laparoscopic suturing - a series of stitches performed using one thread along a suture line.



Advanced Task 6: Upper Plane Suturing

Main Goal:

Free hand practice of continuous or interrupted upper plane suturing, often used in procedures such as ventral hernia repair and hysterectomy.