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Video Article

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Robotically Assisted Laparoscopic Salpingectomy (RALS) during Hysterectomy with Three Trocars: A Didactic Video

Patrick Dällenbach*, Florin Constantin

Department of Pediatrics, Gynecology and Obstetrics, Geneva University Hospitals, Geneva, Switzerland

***Corresponding author:** Patrick Dällenbach, Department of Pediatrics, Gynecology and Obstetrics, Division of Gynecology, Urogynecology unit, Geneva University Hospitals, Geneva, 30 boulevard de la Cluse 1211 Genève 14, Switzerland. Tel: +41-223724118; Fax: +41-223824424; Email: Patrick.Dallenbach@hcuge.ch

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Abstract

Epithelial Ovarian Cancer (EOA) is a malignancy with poor prognosis. Some findings indicate that the fallopian tubes may play a central role in its pathogenesis. Therefore, it has been suggested that bilateral prophylactic salpingectomy at the time of hysterectomy for benign condition would reduce the risk of developing EOA. Nowadays, more and more surgeons use robotic assistance to perform laparoscopic hysterectomy. The number and size of trocars may influence postoperative pain. We present in a video a standardized Robotically Assisted Laparoscopic Salpingectomy (RALS) using only two instruments and trocars.

Keywords: Hysterectomy; Ovarian cancer prevention; Robotically assisted laparoscopy; Salpingectomy

Abbreviations: EOA: Epithelial Ovarian Cancer; RALS: Robotically Assisted Laparoscopic Salpingectomy; RALH: Robotically Assisted Laparoscopic Hysterectomy; POP: Pelvic Organ Prolapse; HULS: High Uterosacral Suspension

Introduction and Aim of the Video

Ovarian cancer is a major cause of cancer death among women and has the highest mortality rate of all types of gynecologic cancer [1]. Attempts of screening have not been successful so far. The majority of ovarian malignancies are derived from epithelial cells. Some experts have suggested that Epithelial Ovarian Carcinoma (EOC) is derived from the fallopian tube and the endometrium, and is not directly from the ovary [2]. Therefore, it has been suggested that bilateral salpingectomy at the time of hysterectomy performed for benign disease may reduce the risk of EOC [3]. In order to conserve ovarian function, opportunistic salpingectomy has to be performed without impairing ovarian vascularization. Many gynecologists nowadays perform Robotically Assisted Laparoscopic Hysterectomy (RALH). Robotic assistance with three-dimension vision may help surgeons better visualize vessels and reduce blood loss. Results from randomized controlled studies show similar results to standard laparoscopic hysterectomy, but at the price of higher costs [4,5]. Postoperative pain varies among studies [6]. We believe that pain is not linked to the technique (standard laparoscopy or robotically assisted laparoscopy), but to the number and size of trocars used during the procedure along with the length of surgery. Therefore, use of the smallest trocars and reduction in their number is of importance. We showed in a previous study that RALH could be easily performed with three trocars only [7]. We present in a video a standardized technique of robotically assisted laparoscopic prophylactic salpingectomy using only two standard instruments introduced by two trocars.

Case Report

Our video shows the case of a prophylactic bilateral salpingectomy performed during hysterectomy with High Uterosacral Ligament Suspension (HULS) in a 51 years old woman, gravida 3 para 1, with no significant comorbidity. Three years before, she had robotically assisted laparoscopic repair of anterior vaginal wall and uterine prolapse by lateral suspension with mesh for Pelvic Organ Prolapse (POP) stage 3. At that time, she wanted to preserve potential fertility and refused opportunistic salpingectomy. She subsequently developed abnormal uterine bleeding and myomatous uterus, with two intramural 2 cm large myomas at pelvic sonography. She was also complaining of vaginal discomfort with sensation of POP recurrence. The indication for hysterectomy was symptomatic myomatous uterus, and symptomatic elongation (5 cm) and hypertrophy of the cervix reaching the hymen. She finally accepted salpingectomy.

Results

The patient was placed in the lithotomy position under general anesthesia. We set up a HOHL manipulator (Karl Storz Company Tuttlingen Germany) at the beginning of the procedure to expose the uterus. We administered antibiotic prophylaxis (Cefazolin 2g IV (Kefzol®)) at anesthetic induction. We performed insufflations of CO_2 with a Veress needle introduced at Palmer point (left hypochondrium). We placed three 8 mm trocars (an 8 mm umbilical port for a 0° optique and two 8 mm lateral ports for the instruments) and used the Da Vinci Xi robot (Intuitive Surgical, Sunnyvale California USA). The video illustrates bilateral RALS during hysterectomy using monopolar scissors and a bipolar grasper. Salpingectomy starts with fenestration of the mesosalpinx using monopolar scissors. The scissors introduced in this window allow lifting and exposure of the tube to perform bipolar coagulation of the mesosalpinx along the tube in both directions. Three-dimension robotic vision makes it possible to coagulate the vessels selectively and to best preserve ovarian vascularization. Monopolar scissors are used to cut, but also to coagulate tissue along the tube. It is important to remove the entire tube especially the fimbria ovarica. Both tubes remain attached proximally to the uterus and are removed with it by the vagina at the end of the procedure.

Conclusion

We believe our video may help surgeons perform salpingectomy in a standardized way during RALH without the need of an additional assistant trocar.

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