

# Robotically-assisted laparoscopic radical parametrectomy and radical vaginectomy

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## Summary

**Background:** Radical parametrectomy is a technically challenging operation used for women found to have occult cervix cancer after a hysterectomy for benign reasons. A similar operation, radical vaginectomy, is rarely performed because of its technical difficulty in getting adequate margins without an attached uterus. **Case Reports:** A 41-year-old woman was found to have a presumed surgical Stage IB1 squamous cell carcinoma of the cervix at time of surgery for uterine prolapse. The patient was offered multiple options of surgery and chemoradiation. A second case, a 55-year-old woman, was found to have 1 cm vaginal cancer nine years after a total vaginal hysterectomy for carcinoma in situ of the cervix. She was also offered chemoradiation versus surgery. For the robotically-assisted laparoscopic radical parametrectomy operating time was 186 minutes with an estimated blood loss of 250 ml. For the robotically-assisted laparoscopic radical vaginectomy operating time was 154 minutes with an estimated blood loss of 150 ml. Neither patient had a hospitalization over 24 hours. There were no intraoperative or postoperative complications. **Conclusions:** Robotically-assisted laparoscopic radical parametrectomy and vaginectomy are both technically feasible procedures.

**Key words:** Radical parametrectomy; Laparoscopic; Cervical cancer; Robotics.

## Introduction

The number of cervical cancers has been decreasing over the past ten years in the developed world. Occasionally, occult cancer is found at the time of a hysterectomy for another indication. When this problem occurs, a radical parametrectomy is often the treatment of choice [1-3]. This procedure has traditionally been done through a laparotomy incision [2]. More recently, several authors have described the use of a laparoscopic approach to radical parametrectomy/upper vaginectomy [1, 4, 5].

We present the cases of two young women who underwent robotically-assisted laparoscopic radical parametrectomy or radical vaginectomy for squamous cell carcinomas of the respective organs.

## Case Reports

### Case 1

A 41-year-old woman was found to have an 11 mm wide lesion (2 mm deep) on final sections after an extrafascial laparoscopic hysterectomy for prolapse. She had also undergone a concomitant open sigmoid resection. Positron emission tomography/computed tomography of the chest, abdomen, pelvis did not demonstrate any evidence of metastatic disease. The patient was extensively counseled as to the risks, benefits and options including surgery versus chemoradiation and open versus robotically-assisted techniques.

The patient elected to undergo daVinci (Intuitive Surgical, Sunnyvale, CA) robotically-assisted laparoscopic radical parametrectomy with pelvic lymphadenectomy six weeks after her initial surgery. Tunneling of the ureter was accomplished with

bipolar cautery. The specimen is shown in Figure 1. Bilateral parametria of greater than 5 cm can be seen in the Figure. Estimated blood loss was 250 ml, and a post-operative hemoglobin level was not checked. Operative time was 186 minutes (including pre-console, console, and post-console time). The final pathology revealed no residual carcinoma in the parametrectomy specimen. Eighteen negative pelvic lymph nodes were found. The patient is doing well without recurrence of disease more than four years from her second surgery.

### Case 2

A 55-year-old woman was found to have a 10 mm wide lesion (3 mm deep) on biopsy. She had undergone a total vaginal hysterectomy with bilateral salpingo-oophorectomy for carcinoma in situ of the cervix nine years prior. Computed tomography of the abdomen and pelvis did not demonstrate any evidence of metastatic disease. The patient was extensively counseled as to the risks, benefits and options including surgery versus chemoradiation and open versus robotically-assisted techniques.

The patient elected to undergo daVinci (Intuitive Surgical, Sunnyvale, CA) robotically-assisted laparoscopic radical vaginectomy with pelvic lymphadenectomy for her FIGO Stage I cancer. Tunneling of the ureter was accomplished with bipolar cautery. Bilateral parametria of greater than 5 cm can be seen in Figure 2. Estimated blood loss was 150 ml, and a postoperative hemoglobin level was not checked. Operative time was 154 minutes (post-console time). The final pathology revealed negative margins with 28 negative pelvic lymph nodes. The patient is doing well without recurrent disease greater than 18 months after her radical procedure.

## Discussion

Radical parametrectomy has been described for the treatment of occult cervical cancer found at the time of extrafascial/total hysterectomy [6, 7]. The most common

Fig. 1

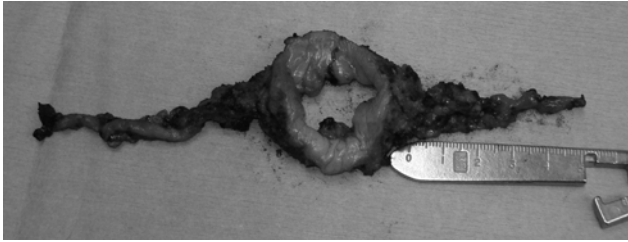


Figure 1. — Specimen from surgery. The patient had daVinci robotically-assisted laparoscopic radical parametrectomy. Frozen section and final pathology revealed negative margins. Unfolded vaginal margins were > 2 cm. Left parametria was 5 cm with a right parametria of 6 cm.

Figure 2. — The patient had daVinci robotically-assisted laparoscopic radical vaginectomy for a small, primary vaginal cancer. Frozen section and final pathology revealed negative margins and negative nodes. Vaginal margins were > 2.5 cm. Both parametria were > 5 cm.



Fig. 2

indication for the initial hysterectomy listed in the literature is carcinoma in situ [2, 7]. The average age of the patients undergoing radical parametrectomy is 45-50 years [8, 9]. The mean blood loss for an open parametrectomy is almost one liter in skilled hands [10, 11].

Radical vaginectomies are rarely performed because of the technical difficulty in getting adequate margins if the lesion is not just at the most proximal aspect of the vagina. They also run the risk of long-term voiding problems [12].

Because of the daVinci surgical system (Intuitive Surgical, Sunnyvale, CA) robotics have become a part of the armamentarium of the gynecologic oncologist [13-15]. Although many radical procedures had been performed using traditional laparoscopic methods, robotics is opening the world of minimally invasive surgery to gynecologic oncologists that previously saw many drawbacks to standard laparoscopy. Synchronously, urologists world-wide have begun to adopt the use of the surgical robot for radical prostatectomy [16, 17].

A technically challenging procedure, like a radical parametrectomy or radical vaginectomy, can be made more challenging by the use of traditional laparoscopy [18, 19]. However, compared to vaginally-assisted techniques, total laparoscopic techniques allow the dissection to be carried out under good direct visualization [20]. The combination of laparoscopy with the dexterity allowed by the use of the surgical robot permits the application of this technology to these procedures so that patients can benefit from the minimally invasive approach.

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