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## Brief Clinical Report

# Laparoscopically-Assisted Hysterectomy for the Management of a Borderline Ovarian Tumor: A Case Report

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### ABSTRACT

Borderline ovarian tumors account for 4% of ovarian neoplasms, an incidence which remains constant despite advancing age.<sup>1</sup> Management for younger women can be unilateral oophorectomy,<sup>2</sup> although simple hysterectomy with bilateral salpingo-oophorectomy is more appropriate for women beyond childbearing age.<sup>3</sup> The authors report a laparoscopic approach to a case of borderline ovarian tumor.

### CASE REPORT

A 41-year-old female, gravida 2, para 2, Ab0 was referred for operative laparoscopic management of a right ovarian mass. This mass was first detected during a routine pelvic exam 6 weeks preoperatively and confirmed by ultrasound to be a thin-walled, 9 cm cyst with no solid components. The patient had no menstrual irregularities and no pelvic symptoms; she relied on her husband's previous vasectomy for birth control. Fifteen years prior to admission she had undergone a laparotomy with resection of a right ovarian serous cystadenoma. The CA 125 level was 15 u/ml. Informed consent prior to surgery included counselling the patient that laparoscopic resection of adnexal masses is not, at present, the standard medical practice. The patient understood this and was anxious to have operative laparoscopic surgery rather than conventional laparotomy.

Under general endotracheal anesthesia, the operating laparoscope and three suprapubic trocars were placed.<sup>4</sup> Inspection of the pelvic contents confirmed a thin, smooth-walled right ovarian cystic mass with normal adjacent pelvic organs, peritoneal surfaces, appendix, diaphragm, and liver. Peritoneal washings were obtained. The cyst was then aspirated and cyst fluid sent for cytology; the cavity was irrigated and the irrigant was also sent for cytology. The cyst wall was then opened and the surface of the cavity visualized with internal

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excrescences noted and biopsied for frozen section. All tissue was removed intact and carefully passed into the 10 mm trocar sleeve, thus avoiding direct contact between the specimens and abdominal wall incisions.

The frozen section was reported to be a borderline papillary serous tumor of the right ovary. Consultation was obtained with a gynecologic oncologist who had agreed to be on "standby" during all operative laparoscopies involving an adnexal mass; a decision was made to proceed with surgical staging of the borderline tumor and laparoscopically-assisted hysterectomy, bilateral salpingo-oophorectomy, and partial omentectomy. The extent of the disease was assessed by thoroughly evaluating the paracolic gutters, all loops of small and large bowel, both domes of the diaphragm, the liver, gallbladder, omentum, and the lower aortic and common iliac lymph node areas. This inspection failed to reveal any visible nodularity or surface excrescences. The patient did not desire to retain childbearing capabilities, therefore, the adnexa and uterus were removed.

After the cyst opening was closed with two interrupted 4-0 polydioxanone sutures (Ethicon, Summerville, NJ) to avoid further spillage, the right adnexa was removed in 1 to 2 cm increments using bipolar coagulation and CO<sub>2</sub> laser incisions along the infundibulopelvic ligament as described in detail elsewhere,<sup>4</sup> and dropped into the cul-de-sac for later removal with the uterus. The left adnexa, which appeared normal, was managed similarly. The bladder flap was developed using hydrodissection<sup>5</sup> and laser incision. The round ligaments and upper portion of the broad ligaments were successively coagulated and incised, as were the uterine arteries bilaterally. The upper portions of the cardinal and uterosacral ligaments were coagulated and cut. Left and right pelvic peritoneal biopsies were obtained and distal omental resection was accomplished by applying Endoloop sutures (Ethicon) to the dependent omentum, followed by incision; the omental specimen was left in the cul-de-sac. Finally, posterior and anterior culdotomy were performed laparoscopically using the CO<sub>2</sub> laser.<sup>6</sup>

Hysterectomy was then finished vaginally. The rest of the vaginal mucosa was incised circumferentially using electrocoagulation.<sup>6</sup> Because the anterior and posterior peritoneum had already been incised laparoscopically, the remainder of the uterosacral and cardinal ligaments were easily clamped, divided, and suture ligated. The uterine specimen, both adnexa, and resected omentum were then removed vaginally. The posterior vaginal vault was suture ligated to the uterosacral ligaments, and the vaginal cuff was closed under laparoscopic visualization.

The duration of the procedure was 140 min. Estimated blood loss was less than 100 ml, and originated almost entirely from the right lower quadrant puncture site and trauma to the inferior epigastric vessels. The postoperative course was uncomplicated, and the patient was discharged on the second postoperative day.

Final histology report confirmed papillary serous borderline tumor of the right ovary, along with mild koilocytotic atypia of the cervix. The right ovarian cyst fluid and peritoneal washings were negative, but the cyst irrigant was considered atypical and suspicious for malignancy. Seventeen months postoperatively, the patient is doing well, with no sign of recurrence.

## DISCUSSION

Borderline ovarian tumors are visually indistinguishable from benign cysts prior to biopsy. Interestingly, in this patient, a serous cystadenoma had been removed from the ipsilateral ovary 15 years prior to the present surgery, and treated with conservative cystectomy; because of her history and her present lack of desire for future fertility, a hysterectomy and bilateral salpingo-oophorectomy were chosen as the appropriate surgical management.

Laparoscopically-assisted hysterectomy and laparoscopic hysterectomy have been previously reported<sup>6,10</sup> for benign and malignant pelvic conditions, such as adhesive disease and large myomas, where vaginal hysterectomy is precluded, as acceptable alternatives to abdominal hysterectomy. The advantages of vaginal hysterectomy, including less pain, shorter hospitalization, a more rapid recovery, and return to full function, apply to laparoscopic hysterectomy and laparoscopically-assisted hysterectomy as well. We further define laparoscopic hysterectomy as the complete endoscopic excision of the uterus from its attachments. In a total hysterectomy the vaginal cuff may be repaired either laparoscopically or vaginally. In a supracervical