Current Surgical Management of Endometrial Cancer

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KEYWORDS

• Endometrial cancer • Robotic • Lymphadenectomy
• Cytoreduction

A total of 43,470 women were diagnosed with endometrial cancer in the United States in 2010, and 7950 died of the disease.[1] Surgery plays a vital role in the management of endometrial cancer at all stages, particularly clinically early-stage disease.[2] Despite being the most common gynecologic cancer in developed countries, there are still many unanswered questions regarding optimal surgical management of endometrial cancer, not the least of which is who should undergo surgical staging.[3] There is ample evidence supporting the lower complication rate achieved with laparoscopic surgery compared with traditional open staging,[4,5] and building evidence to support laparoscopic-assisted robotic surgery for early endometrial cancer.[6,7] Surgery plays an important role in the treatment of advanced stage disease as well, with retrospective studies showing some benefit to optimal cytoreduction.[8–12] This review discusses the role of surgery in the management of endometrial cancer, with an emphasis on current controversies.

EARLY-STAGE DISEASE

Surgical Staging of Endometrial Cancer

Surgical staging is performed for prognosis and to direct adjuvant treatment. Endometrial cancer has been staged surgically since 1988. The procedure involves procurement of peritoneal washings (which no longer factor into the staging system but should be reported with the stage), hysterectomy, bilateral salpingo-oophorectomy, and evaluation of the lymph nodes.[13] Internationally, controversy continues as to what constitutes endometrial cancer staging, and even the FIGO (International

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Federation of Gynecology and Obstetrics) staging booklet is vague.[14] In the United States, the Gynecologic Oncology Group (GOG) generally requires complete pelvic and para-aortic lymphadenectomy in protocols involving clinically early-stage endometrial cancer.[4] Staging can be performed open, laparoscopically, or robotically. The incidence of lymph node metastases in patients with clinical stage I endometrial cancer ranges from 7.4% to 13.3%, with the incidence being significantly higher in patients with poorly differentiated and deeply invasive tumors.[15–17]

The Role of Lymphadenectomy

Two large multicenter randomized control trials have been performed evaluating lymphadenectomy in early-stage endometrial cancer, and both concluded that lymphadenectomy did not change survival.[15,17] The results have been interpreted in various ways, although most agree that these trials indicate that pelvic lymphadenectomy is not a therapeutic procedure.

ASTEC (A Study in the Treatment of Endometrial Cancer) was a multicenter trial in 4 countries involving 1408 women with clinically stage 1 endometrial cancer.[15] Participants were randomized to hysterectomy and bilateral salpingo-oophorectomy (BSO) versus hysterectomy, BSO and pelvic lymphadenectomy, with a primary end point of overall survival. Patients with high-risk uterine factors were then further randomized to adjuvant therapy, regardless of lymph node status. After a median follow-up time of 3 years, there was no statistically significant difference in overall survival with lymphadenectomy (hazard ratio [HR] 1.16 in favor of no lymphadenectomy, 95% confidence interval [CI] 0.81–1.54). Although there appeared to be a trend toward improved survival without lymphadenectomy, the lymphadenectomy group had more patients with aggressive histologies, as well as more patients who were found to have advanced disease (not including lymph node metastases) at the time of surgery.

Concurrently, in Italy, Panici and colleagues[17] performed a similar multicenter trial involving 514 patients with clinical stage 1 endometrial cancer and evidence of myometrial invasion (at least 50% depth if grade 1) on frozen section. Hysterectomy with BSO and pelvic lymphadenectomy was compared with hysterectomy and BSO alone. The primary outcome was overall survival. The Italian trial differed from ASTEC in that adjuvant therapy was administered at the discretion of the treating physician, and the median lymph node count was 20 (as opposed to 12). After a median follow-up of 4 years, there was no statistically significant difference in overall survival with the addition of lymphadenectomy (HR for death 1.2, 95% CI 0.7–2.07), with 5-year overall survivals of 86% (lymphadenectomy) and 90% (no lymphadenectomy).

The ASTEC and the Italian trials show that there is not an independent survival advantage with pelvic lymphadenectomy. However, they do not fully answer the question of whether or not it is beneficial to perform lymphadenectomy because results of the lymphadenectomy were not used to direct treatment. In ASTEC, less than half of the patients who had positive lymph nodes were assigned to radiotherapy, and few patients in the trial received adjuvant chemotherapy or hormonal therapy. In the Italian trial, slightly more than 30% of each arm received adjuvant therapy, showing that lymphadenectomy had not been used specifically to make decisions on adjuvant therapy. These trials confirm the findings of PORTEC 1 (Post Operative Radiation Therapy in Endometrial Carcinoma),[16] which showed that when patients are treated with adjuvant therapy regardless of nodal status, there is no survival benefit.[15,18]

The complications reported in ASTEC[15] and the Italian trial[17] are listed in **Table 1**, as are the complications from LAP-2,[4] a GOG study comparing staging via laparotomy with laparoscopic staging for early endometrial cancer. Data from LAP-2 are included