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American Brachytherapy Society recurrent carcinoma of the endometrium task force patterns of care and review of the literature

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ABSTRACT

PURPOSE: The purpose of this American Brachytherapy Society task force is to present a literature review and patterns of care by a panel of experts for the management of vaginal recurrence of endometrial cancer.

METHODS AND MATERIALS: In 2016, the American Brachytherapy Society Board selected a panel of experts in gynecologic brachytherapy to update our current state of knowledge for managing vaginal recurrence of endometrial cancer. Practice patterns were evaluated via an online survey and clinical updates occurred through a combination of literature review and clinical experience and/or expertise.

RESULTS: There are various retrospective series of patients treated with radiation for vaginal recurrence of endometrial cancer, which include a varied group of patients, multiple treatment techniques, and a range of total doses and demonstrate a wide scope of local control and overall survival outcomes. In the era of image-guided brachytherapy, high local control rates with low significant late-term morbidities can be achieved. Lower rates of local control and higher late-term toxicity are reported in the retreatment setting. In patients with no previous history of radiation treatment, external beam radiation therapy followed by brachytherapy boost should be used. There are varying practices with regard to the definition and appropriate doses of both the high-risk clinical target volume and the intermediate-risk clinical target volume in the setting of vaginal recurrence of endometrial cancer. There are limited data to provide appropriate dose constraints for some organs at risk with the majority of guidance taken from the definitive cervical cancer literature.

CONCLUSIONS: A summary of literature and expert practice patterns for patient selection, dose recommendations, and constraints are provided as guidance for practitioners.

Keywords: Endometrial cancer; Brachytherapy; Vaginal recurrence

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Introduction

Endometrial cancer is the most commonly diagnosed gynecologic cancer in the United States with an estimated 60,000 new cases per year (1). Most women are diagnosed with early-stage disease and are managed with definitive surgery followed by consideration of adjuvant radiation therapy, for selected patients. After definitive treatment, it is vital that women, even those with Stage I-II disease, undergo close surveillance. This is especially important for women with early-stage disease who do not receive radiation therapy, because they have an approximately 10−15% risk of recurrence after surgery alone as compared to <5% in those who receive adjuvant radiation (2, 3). Recommendations as per the National Comprehensive Cancer Network guidelines suggest women have a physical examination every 3−6 months for 2−3 years and then every 6 months or annually (4). Imaging should be performed as clinically indicated.

Close surveillance is recommended in the first 2−3 years because most recurrences will occur within 3 years of a patient's initial treatment. The vagina is one of the most common sites of recurrence (particularly in women without a previous history of radiation after surgery) with most recurrences occurring in the upper part of the vagina (5).

At the time of recurrence, 50−70% of patients are symptomatic with the most common presenting symptom being vaginal bleeding. Patients who present with more advanced recurrences may also report hematuria, hematochezia, decreased appetite, weight loss, pain (in the pelvis, abdomen, hip, or back), cough, shortness of breath, or swelling (in the abdomen or legs) (6−8).

The American Brachytherapy Society published consensus guidelines for interstitial brachytherapy for vaginal cancer that included comments on vaginal recurrence of endometrial cancer but this was not its primary focus (9). The purpose of this manuscript is to provide a more in depth literature review of the management of women with vaginal recurrence of endometrial cancer and current patterns of care among a group of experienced practitioners.

Methods and materials

A literature search of patients with vaginal recurrence of endometrial cancer was performed of published English medical literature in MEDLINE and PubMed from 1988 to 2016 using the terms ''endometrial cancer,'' ''radiation,'' and ''recurrent.'' References in identified manuscripts were also reviewed. Series were selected for review if radiation was the primary treatment modality. Emphasis of manuscripts selected for review were those that predominantly included recurrent endometrial cancer patients, more than 10 patients, and use of 3D imaging for treatment planning. The data were summarized by one of the authors (MK) for the rest of the panel to review. After the panelists reviewed the data, it was apparent that there is insufficient evidence to provide consensus recommendations in many areas.

Given that an evidence-based consensus is not possible at this time, the panelist's current practice patterns were gauged through a 21 question survey developed by two co-authors (MK, LL). The purpose of the survey was to document the range of current practices of the panelists on questions where uncertainty arose during discussion of the literature review (Supplement). Each of the nine physicians was sent the questions via an online survey. All nine physicians responded to the survey and all responses were anonymized.

The results of the literature review and panelist's current practice is presented in five different sections: (*1*) patient selection and/or evaluation, (*2*) role of external beam radiation, brachytherapy, and chemotherapy, (*3*) clinical outcomes, (*4*) target delineation and organs at risk, and (*5*) followup. Each section has questions which are addressed with either a literature review followed by a panelist's current practice section or just a panelist's current practice section.

Given that there is insufficient evidence to provide evidence-based consensus treatment recommendation for many areas, the panelist's current practices are presented to provide the reader with the range of treatments currently being offered by an experienced group of practitioners.

Results

Patient selection and/or evaluation

How should women with endometrial cancer vaginal recurrence be evaluated and selected for treatment with radiation?

Panelist's current practice. When a woman presents with a suspicious area of recurrence in the vagina, a thorough evaluation is mandatory. Evaluation should include a pelvic examination to fully characterize the extent of disease. Ideally, a diagram will be drawn to depict the extent of disease to include information regarding the maximum diameter of the tumor, the location of the tumor including upper, mid, and/or lower vagina as well as left and/or right, anterior and/or posterior vaginal wall involvement, paravaginal involvement, and extension to the pelvic sidewall. Before initiating any treatment, the patient should undergo biopsy confirmation of the recurrence. If a patient has received previous radiation it is important to limit the extent of the biopsy as increased complications can occur with more aggressive approaches in the setting of previous radiation (10). Imaging is also an important component of patient evaluation and should include at least a CT scan of the chest and/or abdomen and/or pelvis to define pelvic and extrapelvic disease. If a positron emission tomography scan can be authorized, it can also be useful in characterizing the extent of disease and assessing any concomitant nodal