Advances in the Treatment of Cervical Cancer

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This article summarizes the current management of patients with newly diagnosed cervical cancer. The topics range from the management of early-stage disease to the phase III randomized studies that have established the current standard of care for patients with locally advanced cancer of the cervix. New approaches to combined-modality therapy with the goal of improving outcomes and decreasing complications are also described.

When reading Dr. Shivnani and colleagues’ well written article on the current management and treatment of cervical cancer, several thoughts came to mind. I will elaborate on some of these considerations below.

**Surgical Advances**
One of the most important recent advances in the treatment of cervical cancer in women who want to remain fertile is radical vaginal trachelectomy with pelvic node dissection. Dargent[1] was the first to report on this procedure, which involved a laparoscopic pelvic lymph node dissection followed by the surgical resection of the upper vagina, the affected cervix (with an adequate margin), and the cardinal and uterosacral ligaments. At a median follow-up of 76 months, 4 of 96 patients had recurrences after undergoing radical vaginal trachelectomy and pelvic node dissection.[1] In this study, recurrence was more frequent with a cervical lesion > 2 cm ($P = .002$) and with a depth of stromal invasion > 10 mm ($P = .001$).

Plante et al,[2] who evaluated all the published series on this procedure, reported a recurrence rate of 4.2% in a total of 319 patients at a median follow-up of 44 months. In a separate study, Plante et al[3] reported on pregnancy outcomes of 72 patients who had undergone a trachelectomy and found that 31 (43%) of them had a total of 50 pregnancies. Thirty-six of these pregnancies (72%) resulted in third-trimester deliveries. Because it is associated with a low recurrence rate and has allowed many successful pregnancies, radical vaginal trachelectomy is emerging as a favorable alternative treatment for patients with early-stage cervical cancer who wish to preserve their fertility.

The other new surgical technique for the treatment of cervical cancer is laparoscopic hysterectomy. Several studies have shown that laparoscopic hysterectomy is a reasonable alternative to abdominal hysterectomy.[4] In patients with early-stage cervical cancer, laparoscopic hysterectomy is associated with a longer operation time but a significantly shorter hospital stay and less blood loss. Laparoscopic surgery may provide an advantage in patients with locally advanced cervical cancer by allowing easier and safer evaluation of surgical nodal status, particularly in the para-aortic node region.

**Imaging and Radiation Therapy**
Regarding advances in imaging, positron-emission tomography (PET) is the only imaging modality that offers a full-body scan at one time. However, we still do not know the sensitivity and specificity of PET scanning compared with surgical staging. A recent study presented at an American Society of Clinical Oncology meeting compared PET with surgical staging of the para-aortic area. In 13 patients, PET scanning yielded false-negative results in 2 patients and a false-positive result in one patient whose nodes in the pathologic specimen were grossly enlarged and inflamed in serial sectioning.[5] The Gynecologic Oncology Group has just opened a study to compare dynamic magnetic resonance imaging, PET scanning, and surgical staging, which we hope will answer some of these questions.

In terms of radiation therapy for the treatment of cervical carcinoma, I believe that image-guided brachytherapy will become increasingly important, but larger studies are needed to clarify the role of this modality. Currently, it is the most effective method of targeting organs at high risk for side effects and accurately delivering high doses of radiation at high risk for recurrence. It is hoped that this will help improve local control, especially in patients with large lesions and lower complication rates, particularly in the sigmoid colon and rectal areas.

I believe intensity-modulated radiation therapy (IMRT) has a role in the treatment of cervical cancers. As with any new technology, however, there are many concerns and potential pitfalls. Given the lack
of clinical data on the use of IMRT—in fact, most of the data are from a single institution—more prospective studies are definitely needed. Also, a major concern in the use of IMRT is interfractional and intrafractional organ motion and its effect on margin size. These and other problems need to be addressed before IMRT becomes a standard treatment for cervical cancers. Nevertheless, it is probably one of the best methods of delivering high doses to grossly positive nodes, treating recurrent disease, and helping treat locally advanced stage IVA disease.

**Conclusion**

Dr. Shivnani and coauthors' article thoroughly addresses the advances in and current management of cervical cancer. Hopefully, through some of these advances, we will improve survival and minimize side effects and thus improve the quality of life of patients with cervical cancer.

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**References:**


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