Cervical cancer is preventable with screening and HPV vaccination

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Drs. Nicole Nevadunsky and Keyur Mehta,
for Montefiore

Montefiore Einstein

EN ESPAÑOL: El cáncer de cuello de útero puede prevenirse con exámenes y la vacuna contra el VPH.

Cervical cancer continues to be the number one cause of cancer deaths in women worldwide, but effective prevention has dramatically reduced the number of cases of cervical cancer and the number of lives lost in developed countries. Where widespread use of the Pap test, which identifies abnormal cells in the cervix before they progress to cancer, is in place, there has been steady decline in diagnoses of cervical cancer over the past 40 years. With the advent of the HPV vaccine in 2006, which protects against the viruses that cause most cervical cancers, the end of this disease may be on the horizon. Unlike many cancers, screening equals prevention by finding changes in the cells of the cervix before they become cancerous. With

the added protection of a vaccine, cervical cancer could soon be a thing of the past. Doctors are hopeful that empowering women with knowledge about this disease and how to prevent it will sustain the momentum.

HPV and the progression of cervical cancer

Human papillomavirus (HPV) is found in 99% of cervical cancers. There are more than 100 known varieties of this virus, but two types are considered to be the cause of more than 70% of cases of cervical cancer. HPV is incredibly common — so widespread that it's estimated by age 50 about 80% of women have been infected by some type of HPV. In most women, the body clears the infection on its own with no lasting harm, so simply having HPV does not automatically lead to cervical cancer. A small number of women will develop a persistent infection, and for them, the risk of the virus transforming normal cervical cells into abnormal ones is the greatest.

Cervical cancer begins as noninvasive dysplasia, which is the presence of cells in the cervix that are abnormal but not cancerous. The Pap test examines a sample of cells from the cervix for evidence of dysplasia. Depending on the results of the test, the doctor may recommend additional procedures, such as a colposcopy or biopsy, to further evaluate the cells. It's important to note that having dysplasia does not automatically mean a woman will end up with cervical cancer, but it does call for ongoing monitoring.

Unfortunately, more than 13,000 women are diagnosed with invasive, or advanced, cervical cancer each year, and about one-third of them will not survive. Here's what every woman needs to know about reducing her risk of cervical cancer.

Screening and vaccination

The importance of regular health screenings cannot be overemphasized, including an annual pelvic exam. Based on your health history, your primary care physician can recommend the appropriate course of cervical cancer screening for you, but there are some general guidelines. The American College of Obstetrics and Gynecology advises women aged 21-29 to have a Pap test every three years, and women 30-65 to have both a Pap test and HPV test every five years. However, if you have HPV, HIV, are immunocompromised, or have a family history of cervical cancer, your screening timeline will likely be modified by your doctor based on your individual circumstances. Other factors that can impact screening recommendations include:

- Previous history of sexually transmitted disease
- No HPV vaccinations
- Early sexual debut
- Bleeding after intercourse

The American Advisory Committee on Immunization Practices (ACIP) recommends HPV vaccination for all females and males beginning at 11 and 12 years of age. The vaccine can be given as early as 9 years old, and catch-up vaccines are recommended for all adolescents and adults 13-26 years of age. While HPV vaccine has recently been approved by the FDA for adults age 26-45, ACIP recommends that the decision for this age group be based on shared clinical decision-making that considers individual circumstances.

The HPV vaccine covers nine different strains of the virus, including those which are linked to cervical cancers and those which cause genital warts. Though males do not get cervical cancer, protection from genital warts is important for both genders. There is also continuing research into links between HPV and other cancers, strengthening the case for immunization of both boys and girls.

Treatment for cervical cancer

When noninvasive dysplasia progresses to early-stage invasive cervical cancer, surgery is the most common treatment, often augmented by radiation therapy and/or chemotherapy. For advanced disease, the gold standard of treatment is radiation therapy administered in a two-step sequence: external and then internal. External radiation is a painless X-ray therapy provided on an outpatient basis over a number of weeks. Internal radiation, called brachytherapy, involves placing a sealed radiation source directly into the body, near or next to the cancer to precisely target the disease. With high-dose rate (HDR) brachytherapy, patients can be treated in an outpatient setting, as compared with low-dose rate brachytherapy, which requires a hospital stay.

Montefiore's state-of-the-art care for dysplasia and cervical cancer

Montefiore is currently participating in a clinical trial testing a management protocol for high-grade cervical dysplasia using the HPV vaccine with electroporation, where an electrical field introduced into cells improves the vaccine response. This nonsurgical solution is being investigated by Montefiore in partnership with other cancer centers of excellence around the country.

For those whose condition has advanced to cervical cancer, Montefiore's renowned Center for Excellence in Cancer Care offers HDR brachytherapy with the most advanced hybrid applicators. This allows us to treat more patients on an outpatient basis, even if they are at a more advanced stage of cancer. The widespread availability of this specialized treatment is on the decline, despite studies that show brachytherapy improves survival. We're proud to continue to refine the procedure and offer this important option to our patients with cervical cancer.

Montefiore has also embraced an advanced approach to external radiation treatment, made possible by our partnership at the New York Proton Center. We're able to deliver radiation therapy using proton particles rather than traditional x-ray beams (photons) to increase the

precision of radiation targeting the tumor while minimizing the exit dose, thereby potentially reducing side effects.

On the frontier of cervical cancer care, there is growing evidence that immunotherapy may benefit patients with advanced or recurrent cervical cancers. Cancer evades the immune system by blocking receptors in our T-cells that identify cancer. With immunotherapy, these blockers in cancer cells are eliminated so our immune system can fight them naturally. Montefiore is participating in a nationwide clinical trial coupling immunotherapy with radiation therapy for women with high-risk cervical cancer, and we've recruited the first three patients for this study. Montefiore is also in the early stages of recruitment for another trial using immunotherapy for advanced recurrent cervical cancer with a protein receptor that serves as an immune regulator.

As we celebrate the remarkable progress being made in treating cervical cancer, we remain committed to empowering women to prevent this disease. Screening and HPV vaccination are available at all Montefiore practices throughout Westchester and the Hudson Valley. Let's make cervical cancer a thing of the past.

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