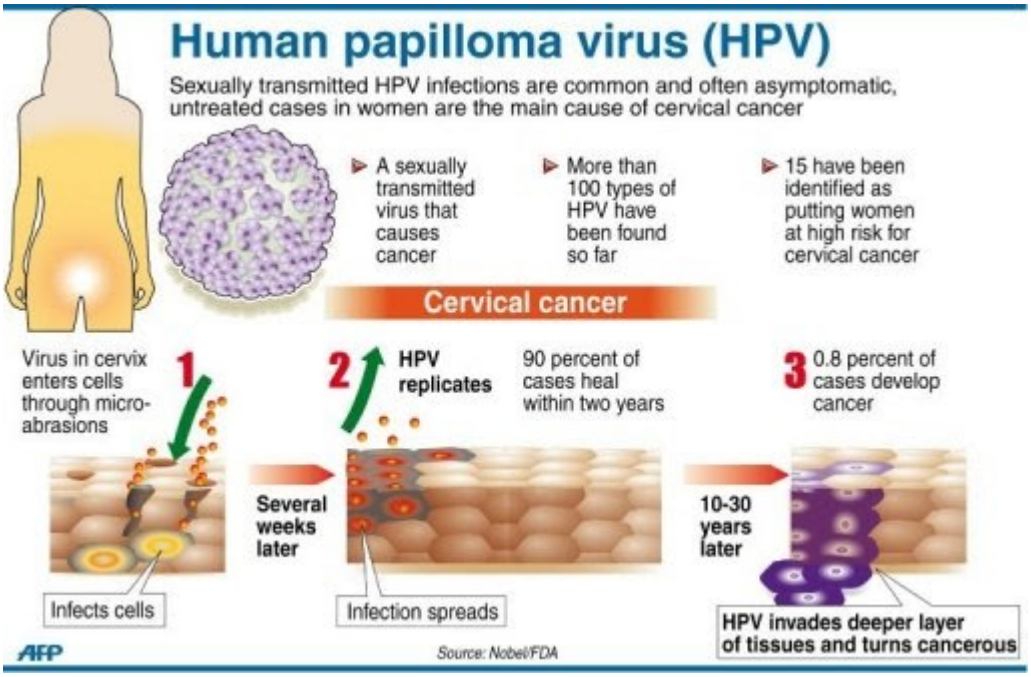
The human papillomavirus: beyond cervical cancer [1]

Submitted by Jaime Andrés Aponte Ortiz [2] on 4 February 2016 - 1:23am

 [2]

"We can I can" is the theme for this year's World Cancer Day.

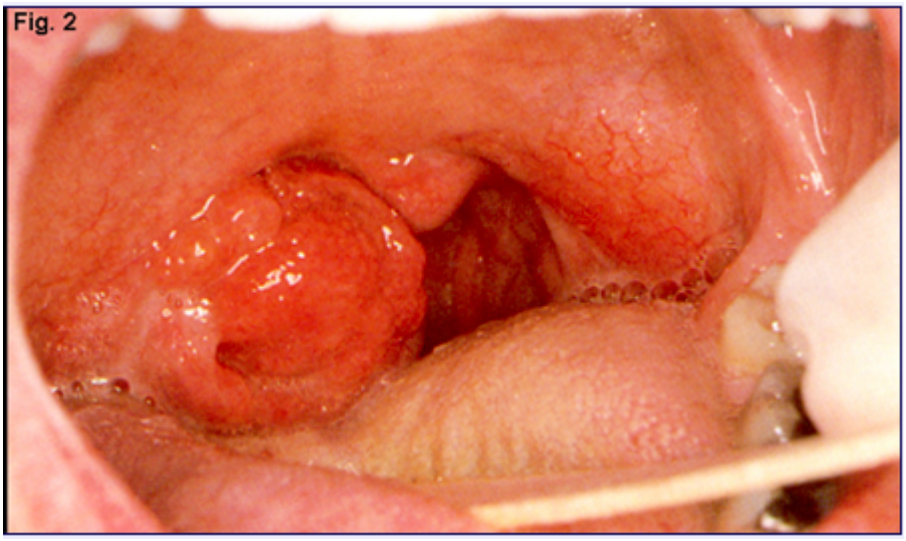
The teenage years usually leave strong memories that persist for the rest of our lives. These are years of many changes, much growth, physical and emotional, and consequently, the loss of innocence and the beginning of responsibilities. For young people, one of these responsibilities, shared with their parents, is associated with the decision to be vaccinated or not against the human papillomavirus (HPV). Vaccination is recommended as a preventive measure against the possibility of developing cervical cancer later on, should they become infected with the virus . Recently, the topic was heavily discussed in Puerto Rico because of the death of Rhaiza Velez, a mother of three children and only 32 years old, who died from this condition, bringing to light the importance of prevention.



In the United States it is estimated that there are 79 million people infected and 14 million are infected annually. Preliminary studies on the island show that 30% of Puerto Rican women have cervical HPV infection, 43% have anal infection, and 20% co-infection. The virus is mainly spread by sexual contact. It also occurs by contact between infected skin, or an individual with certain infected parts can move the infection to others parts in his/her own body through touch. Thus, whenever there is contact with an infected tissue there is the possibility of transmission.

The infection can manifest itself in various ways. Many cases of infection are resolved without difficulty because the immune system eliminates the virus from the body. In some instances there may arise warts, mostly in the perianal and genital area, which have a cauliflower appearance. There may also be precancerous tissue changes without external manifestation of physical symptoms.

Infection with HPV has been identified as a potential cause of cancer of the tongue, oropharynx (throat and mouth), anus, vagina, and penis. This means thatboth men and women are at risk of developing cancer as a result of infection with the virus.



Squamous cell carcinoma of the right amygdala.

The CDC has yet to establish what is the main means of transmission of HPV to the oropharynx and subsequent tumor development. This type of cancer and tumors associated with it, is often highly invasive, affecting multiple structures such as the tongue, tonsils, throat, and soft palate. Although the virus increases the possibility of developing these cancers, it's been found that patients infected with the virus usually have longer life expectancy with the disease compared with uninfected individuals. Unfortunately, this and other cancers mentioned previously often have dire consequences for the individual, from the process of diagnosis and treatment with its side effects, to the amputation of certain structures or, in the worst cases, death.

HPV has been popularly associated with cancer in women and their infection with irresponsible sexual behavior. However, further investigations are increasing knowledge about this specific virus and its possible correlation with the development of various cancers. Despite the progress, there is still much research to be done regarding the virus, its complications, infection, and possible treatments.

Currently, epidemiological studies are being conducted in Puerto Rico by Dr. Ana Patricia Ortiz in the Medical Sciences Campus (RCM). In addition, publications from the tumor biology laboratory of Dr. Adriana Baez, also faculty of RCM, have established virus infection as a risk factor for the development of head and neck cancer. Moreover, as a matter of public health, awareness is being raised as to the importance of getting vaccinated to prevent infection with the virus, especially since local vaccination rates for HPV are considered low. Only 5% of the women in the reproductive age have been vaccinated according to a study by Dr. Ortiz.

So far there are several vaccines for the virus, Gardasil being the most popular. In Puerto Rico the Law Number 9 indicates that health plans should cover the HPV vaccine for women and men between the ages of 11 and 18 years of age. This vaccine only protects against four strains of the virus, which have been associated with the complications described above. The vaccine protects against the following strains: 6, 11, 16, and 18. However, there are many other strains of HPV (around 100 in total, 40 of which are sexually transmitted) that can also cause cancer and other complications. So those individuals who have been vaccinated are not exempt from taking

other precautions to prevent the spread of strains not covered by the vaccine.

The term strain means that within the same group of virus, mutations occur and each variant may have similar effects, but slightly different from the original virus. Although, most often, different strains of the same virus are associated with the same disease, these variants have different structural components which are not recognized by the vaccines developed for other strains. Therefore, receiving the vaccine does not protect us against all variants of the virus.

Medical conditions such as infection with the human papillomavirus make us aware that many decisions we make about our health can sometimes affect other people. It is important to inform and encourage both men and women to use protective barriers such as condoms when having sex. In addition, it is recommended to avoid unnecessary contact with suspicious tissues, for example, if warts are present.

In other words, the "cap" (condom) can protect you not only from sexually transmitted diseases, but it can also keep you cancer-free. Be aware and consult with health professionals about HPV to prevent more cases like Rhaiza from happening again. Let's take her ordeal as an opportunity to learn about a condition that affects many and through prevention and education improve our quality of life and that of our loved ones.

This entry was published on the occasion of the celebration of **World Cancer Day** [3]**.** This article was written by *Jaime Aponte Ortiz* [4], a student at the School of Medicine of the Medical Sciences Campus of the University of Puerto Rico.

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