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Persistent infection of human papillomavirus 18: case report.

Clinical Case

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SUMMARY.

Objective. This report shows that the presence of human papillomavirus (HPV) DNA in the genital tract could be the result of a persistent and not a recent infection.

Study design. This case is part of a cross sectional study to determine the prevalence and genotypes of HPV in women with cervical cancer and precursor lesions. HPV diagnosis was done by polymerase chain reaction using MY09/MY11/HMB01 primers; for genotyping line blot hybridization was used.

Results. A biopsy of a woman with diagnosis of cervical cancer, who had sexual intercourse for the last time 30 years before, was positive to type 18 HPV.

Conclusions. A new diagnosis of HPV in the genital tract is not necessarily the result of a recent infection. (*Rev Biomed 2005; 16:255-257*)

Key words: Papillomavirus, chronic infection, sexually transmitted diseases.

RESUMEN.

Infección persistente por papillomavirus humano 18: estudio de caso.

Objetivo. Este reporte tiene como objetivo demostrar que la presencia de ADN de papilomavirus humano (PVH) en el tracto genital puede ser el resultado de una infección persistente y no de un reciente contagio.

Diseño del estudio. Este caso es parte de un estudio transversal, cuyo objetivo fue determinar la prevalencia y genotipos de PVH en mujeres con cáncer cervical y sus lesiones precursoras. El diagnóstico se realizó por medio de la técnica de reacción en cadena de la polimerasa, utilizando iniciadores universales MY09/MY11/HMB01; para genotipificar se utilizó hibridación en línea.

Resultados. La biopsia de una paciente con diagnóstico de cáncer cervical invasor, que refirió no haber tenido vida sexual en los últimos 30 años, fue positiva PVH genotipo 18.

Conclusiones. El diagnóstico de PVH en el tracto genital no implica necesariamente una infección

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Palabras clave: Papilomavirus, infección crónica, enfermedades de transmisión sexual.

INTRODUCTION.

To date HPV is the most frequent sexually transmitted infection. Its occurrence is associated with sexual activity, and in fact the prevalence of HPV peaks soon after initiation of sexual activity among young women (1).

HPV infections are usually self-limited and revert spontaneously, with only a small group of women developing cervical cancer. The evolution of HPV infection to cancer is dependent on several factors, many of which are still unclear. However, persistent infections have been associated with the development of cervical cancer (2). Certain types HPV called "high risk": 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73, and 82 are the principal cause of invasive cervical cancer (3). In this case report we describe the presence of HPV type 18 in a cervical cancer of a woman who denied having had sexual activity during the previous 30 years.

Case report.

A 73 year old female patient was referred to the colposcopy clinic of hospital O'Horan in Merida, Yucatan, Mexico, with a Pap smear of invasive cervical cancer.

Past history revealed first intercourse at 19 years, five pregnancies, four deliveries and one spontaneous abortion, menopause at age 50, last delivery occurring 36 years before the interview. She never used any contraceptive methods before or smoked, only had one sexual partner, and her last intercourse was 30 years before, at age 43, shortly before her husband died. A first pap smear was taken one month before the colposcopy. On that occasion the main reason for consultation was spontaneous vaginal bleeding.

In the colposcopy an exophytic, friable, and bleeding lesion and dense aceto-white epithelium

with diffuse border and abnormal vessels was seen. Two biopsies were taken from the lesion; one of which was placed in PBS and stored at -20°C. DNA was extracted by phenol-chloroform separation.

The presence of HPV DNA in the biopsies was determined by PCR L1 consensus MY09/MY11 primers. The samples were co-amplified with biotinylated MY09/MY11/HMB01 and β globin primers GH20/PC04. HPV types were determined by reverse line blot hybridization that contained 29 probe lines detecting 27 individual HPV genotypes and two concentrations of β globin control probe. Samples were considered adequate if they hybridized with β globin probe and HPV positive if they hybridized with any papillomavirus probe. DNA of SiHa was used as a positive control; PCR mix without DNA was used as negative control; the samples were positive for HPV 18 (figure 1). Histopatologic diagnosis was invasive squamous-cell carcinoma.

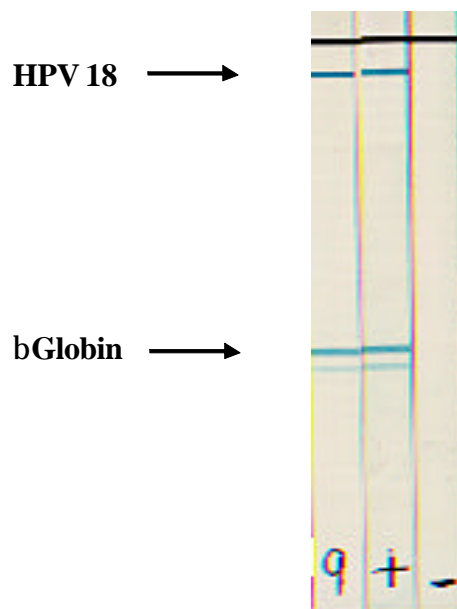


Figure 1.- Results of the reverse line blot hybridization. Number nine is for the patient, the line at the top is specific for HPV 18; the two lines in the middle are two different concentrations of β globin. Strip marked with + is positive control (DNA of SiHa). Strip marked - is negative control (PCR mix without DNA).

DISCUSSION.

Before we address the implication of this case, it is important that we consider its limitation. Persistent infection could not be determined with a cohort study indicating that the patient had DNA of the same HPV type in subsequent samples.

Persistent infection was defined based on the patient's history; the finding of HPV DNA in a patient without sexual activity in the previous three decades indicates the presence of an infection which has lasted for at least that time.

Actually, HPV infection is the most common sexually transmitted infection. In 80% of young women the infection is transitory, with the virus being eliminated in a period of between 12 and 18 months (2).

Persistent viral infection is a prerequisite for the development of cervical cancer. However, little has been written about the factors that promote or facilitate persistent viruses. In so far as the agent, it has been clear that high risk viruses shows greater tendency for persistence than those of low risk (2).

Recently, smoking and low consumption of vegetables as well as a low concentration of seric cis-lycopene have been associated with persistent infection (4, 5).

Epidemiological studies have shown that the number of sexual partners of women is directly related to the risk of developing cervical cancer. The present case is that of a monogamic woman, which is relevant in that it makes us think about the role the male plays in the development of the disease. The risk of monogamic women increases when there are signs of HPV in their partner (6).

Nowadays HPV infection is an important reason for a visit to the gynecologist. Diagnosis of any sexually transmitted infection causes anxiety and stress in the patients (7). HPV diagnosis in women has psychological and emotional repercussions, since it creates doubts with respect to the fidelity of the partner, as it can be assumed that HPV infection is the result of a recent extramarital relation. Therefore, this often causes deteriorations in the couple's relationship.

One of the principal objectives in presenting

this case is to show that finding HPV DNA in the genital tract does not necessarily have to be the result of a recent infection; it can be a persistent viral infection. We hope this information will allow medical doctors to face this diagnosis with the necessary tools, in order to give adequate information and support for couples who need it, and to reduce the psychological stress and the repercussions that HPV diagnosis implies.

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