

Letter to the Editor

Human Papilloma Viruses (HPVs) no Co-Existence in Breast Cancer and Cervical Cells in the Same Patient

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Abstract

High-risk human papilloma viruses (HPVs) were detected in both breast cancer tissues and cervical cells from 56 breast cancer patients. The results suggested that HPV infection did not coexist in breast and cervical tissues. HPV infection of the breast cancer tissue is more likely to happen in patients without cervical infection.

Key Words: breast cancer, cervical cells, human papilloma viruses, hybrid capture

The same type of high risk human papilloma viruses (HPVs) have been detected in both cervical tumour and breast cancer tissues from women who underwent surgery for high grade cervical intraepithelial neoplasia (1) or cervical cancer (4) and breast carcinoma as second primary cancer. This finding led to the hypothesis that HPVs may be transmitted by hand from the female perineum to the breast tissue during sexual activity (2, 3). If this is correct, HPV ought to be simultaneously detected in both the breast cancer tissue and the cervical cells from the same breast cancer patient. However in both of the two studies above (1, 4), cervical lesion had been removed prior to the occurrence of breast cancer, hence no direct evidence was obtained to support the theory that HPV infection occurred simultaneously in both breast and cervical tissues.

We examined the existence of 13 subtypes of high-risk HPV DNA (HPV-16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 68) in breast cancer tissues and cervical smear cells collected from 56 breast

Table 1. High-risk type HPV positive in breast cancer tissue and cervical cells

Tissue HPV status	Breast cancer tissues number of cases (%)		<i>P</i> -value
	Positive	Negative	
Cervical cells	positive	0 (0.0)	0.414
	negative	8 (14.3)	
		9 (16.1)	
		39 (69.6)	

cancer patients without cervical disease history using a Hybrid Capture II system. It was reasonable that in the same patient high-risk type of HPV DNA would be positively detected in both organs to support the traditional transmission hypothesis. However the result was opposite: nine out of the 56 patients were HPV positive in breast cancer tissue, and eight patients were HPV positive in cervical tissue but in no patient were both tissues positive (Table 1). The results suggested that HPV infection did not coexist in breast and cervical tissues.

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Based on the findings above, we proposed a hypothesis: human defensive system is activated following the HPV infection in cervical or breast tissue. Subsequently, further infection to other organs in the same individual will be limited. Therefore, HPV infection of the breast cancer tissue is more likely to happen in patients without cervical infection. Further investigations of the HPV infection in breast cancer tissues are needed in larger investigated population and different ethnics.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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