

HPV NEGATIVE CERVICAL CANCER CASE REPORT

TUMOR MICROENVIRONMENT AND POTENTIAL NEW SCREENING TARGETS FOR A BETTER UNDERSTANDING OF THE OCCURENCE OF THIS SPECIFIC CANCER

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OBJECTIVES

Cervical cancer is primarily associated with persistent infection by high-risk human papillomavirus (HPV). Nevertheless, a small proportion of cases, particularly certain adenocarcinomas, are HPV-negative. These rare tumors exhibit distinct biological characteristics, including a specific tumor microenvironment and neoantigen expression that may represent future diagnostic or therapeutic targets. Novel biomarkers could potentially be used to improve early detection. This study highlights the limitations of screening strategies based solely on HPV testing and addresses the diagnostic and therapeutic challenges of HPV-negative cervical cancer.

METHODS

We report the case of a 55-year-old woman who had not undergone cervical screening for four years and presented with abnormal uterine bleeding, abdominal pain, and general deterioration. Clinical examination and computed tomography revealed a uterus suspicious for malignancy. Histopathological analysis confirmed invasive adenocarcinoma with negative HPV DNA testing. Staging demonstrated invasion of the left parametrium and uterine isthmus, with evidence of peritoneal carcinomatosis. Systemic chemotherapy with carboplatin and paclitaxel was initiated.

RESULTS

Despite treatment, the clinical course was unfavorable and required supportive care. The literature confirms the rarity of HPV-negative cervical cancers and identifies potential biomarkers such as PRAME, HMGA2, ETV4, MEX3A, TM7SF2, SLC19A1, and TTYH3.

The pathogenesis of HPV-negative cancers may be associated with the immune microenvironment, and long non-coding RNAs. Notably, HPV-negative cancers display lower levels of immune cell infiltration while expressing a greater number of potential neoantigens. Some associated with poorer overall survival.

CONCLUSION

HPV-negative cervical cancers require rigorous diagnostic confirmation. The absence of specific targeted therapies underscores the need for reliable biomarkers and personalized treatment strategies to improve patient outcomes. Enhancing the sensitivity of HPV detection, and refining the classification of pathological subtypes are key priorities in reducing false-negative results. At present, no specific therapy exists for these cancers, making this line of research particularly critical.