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Identification of human papilloma virus DNA in chronic otitis media and middle ear neoplasms

*B. Rydzewski¹, A. Gozdzicka-Józefiak², R. Podskarbi-Fayette¹,
M. Matusiak¹, Poznan; Poland^{1,2}*

Purpose: The assesment of presence of HPV types 6, 11, 16, 18 DNA in middle ear pathologies.

Material and Methods: the examination was carried on a group of 53 patients, among which there was 39 cases of chronic granulation otitis media, 7 cases of cholesteatomous otitis media, 6 cases of malignant neoplasms and 21 cases of benign neoplasms. Post-operative specimens like polyps, cholesteatoma masses, granulation tissues and malignant neoplasms tissues were subjected to PRC reaction.

Results: among all 53 cases HPV viral DNA was indentified in 22 cases (41.5%), 12 of them (22.6%) were high oncogenic HPV type 16 and 18, and 14 of them (26.4%) were low oncogenic HPV type 6 and 11. Detection of viral DNA in the group of 39 chronic granulation otitis media cases gave the result of 12 (22.6%) positive assays for Papilloma DNA, 9 (16.9%) positive assays for HPV type 6 or 11, and 7 (13.2%) positive assays for HPV type 6 or 11. In the group of cholesteatomatous chronic otitis media analogous identification gave positive assays for HPV type 6 or 11 in 5 (70.5%). In each of 6 middle ear malignant neoplasms a presence of HPV type 16 or 18 was confirmed. A control study (a group of patients operated on otosclerosis and tympanic membrane perforation) was fully negative – in any case no HPV DNA was identified.

Conclusions: HPV type 6 and 11 are connected to benign lesions in middle ear, and HPV type 16 and 18 are strictly connected to malignant neoplasms. It is plausible, that its presence in middle ear tissues is one of the reasons for pathological growth within middle ear structures.