Squamous cell carcinoma of the oropharynx in a patient infected with HPV type 35 – case report

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RAK PŁASKONABŁONKOWY USTNEJ CZĘŚCI GARDŁA U PACJENTA Z WIRUSEM BRODAWCZAKA LUDZKIEGO HPV TYP 35 – OPIS PRZYPADKU

Streszczenie
Raki płaskonabłonkowe jamy ustnej, a szczególnie te zlokalizowane w obrębie głowy i szyi, są jednymi z najczęściej występujących nowotworów w Polsce. Z danych literaturowych wynika, iż są dwie główne drogi prowadzące do rozwoju tego nowotworu. Jedna z nich to używanie wyrobów tytoniowych i alkoholu, druga to występowanie wirusa brodawczaka ludzkiego HPV, a przede wszystkim typów onkogennych wirusa, m.in. typu 35. W pracy przedstawiono przypadek 53-letniego chorego, u którego po wykonaniu testu diagnostycznego opracowanego przez firmę Nucleagena, stwierdzono obecność wirusa HPV35. Dodatkowo w wyniku badania stomatologicznego chorego, stwierdzono obecność raka ustnej części gardła (Carcinoma oropharyngis). W badaniu histopatologicznym zmiana okazała się rakiem płaskonabłonkowym o stopniu zawansowania miejscowego pT3. Ze względu na wiek oraz dobry stan ogólny zdrowia, pacjent został poddany skojarzonemu leczeniu radiochemioterapii.

Słowa kluczowe: rak ustnej części gardła, rak płaskonabłonkowy, wirus brodawczaka ludzkiego typ 35

In 1999, malignant neoplasms of the oral cavity (including lips) and oropharynx constituted 2.8% of all malignant neoplasms in men and 0.8% in women. Epidemiological studies show that that incidence in men is almost 5 times higher than in women.

The most common locations of these neoplasms include, in decreasing order, vermilion, tongue, palatine tonsils, floor of the mouth, oropharynx, palate and gingiva (1). In 90% it is the case of squamous cell carcinoma (2).

The most important risk factors for cancers are smoking and chewing tobacco as well as alcohol abuse. They produce a synergistic effect. Only in the case of lip carcinomas, chronic exposure to solar radiation is the most important risk factor, while smoking pipe or cigarettes and poor oral hygiene are additional threats.

Cannabis smoking may be of certain significance, especially in young people, in oral carcinomas (3, 4). In India and Southern Asia, development of carcinomas in this area is associated with chewing betel quids, which usually contain tobacco, slaked lime and Areca palm nuts (5). Infection with human papilloma virus (HPV), mainly type 16 and 35, is detected in cells of oral and oropharyngeal carcinomas about 3 times more often than in carcinomas of other areas within the head and neck. It occurs particularly often in carcinomas of palatine tonsils and the oropharynx (6-9). More and more data indicate there is a causal link between HPV infection and development of squamous cell carcinomas in this area, above all in non-smokers and non-drinkers. It should be emphasized that various HPV detection methods are used and test results are not unequivocal.

CASE REPORT

A patient, aged 53, was admitted to the Department of Head and Neck Neoplasms of the Oncology Institute in Warsaw due to oropharyngeal cancer, which had been diagnosed during dental examination. The patient presented to the dentist due to very poor state of dentition. After having performed initial examination and having taken an orthopantomogram (fig. 1), the dentist unequivocally detected numerous roots with gangrenous pulp.

After diagnosis had been made, history was taken. The 53-year-old was on his last dental check-up 20 years earlier. During this period he had been abusing alcohol. In addition, he has been smoking one pack of cigarettes daily on average since he was 20. He had never used prostheses and taken care of oral hygiene, as he used to brush teeth every two or three days. It was initially established that patient's sexual life had been very rich. It is worth noticing that frequency of accidental contacts with women without protection was quite high. Moreover, due to the fact that he had worked in the printing industry for 30 years, he had been exposed to many quite strong substances with carcinogenic properties.

After dental consultation and sanitation of oral cavity, the patient was referred to the Department of Head and Neck Neoplasms at the Oncology Institute in Warsaw. Prior to commencement of combined radiochemotherapy, macroscopic diagnosis of an oropharyngeal neoplasm had been made (fig. 2 A, B).

Under the combined radiochemotherapy scheme proposed by doctors from the Head and Neck Department at the Oncology Institute in Warsaw, the patient received the first course of chemotherapy with 200 mg DDP. During treatment, the dentist took a sample directly from the oropharyngeal mucosa within the neoplasm's location. Such a sample was examined for HPV. The examination revealed HPV type 35, which is highly oncogenic. With use of a commercial diagnostic test developed by Nucleagena®, 38,500 copies of viral DNA were detected, which corresponds with 10,000 HPV DNA copies/1 μg of DNA isolated from the swab from the sample. Qualitative examination with genotyping was performed with use of PCR and RFLP. Quantitative RT-PCR examination was characteristic of the following sensitivity: 1000 virus copies/1 μg of DNA of material sampled from tumour.

Radiochemotherapy was discontinued for 4 days due to a bacterial infection, which subsided after treatment in accordance with antibiogram. After another consultation, a second course of DDP-based chemotherapy was abandoned, as the first course resulted in full regression of lesions in the oropharynx on the right side (fig. 3 A, B) and partial regression by about 70% of lymph node packages of the neck on the right side.

After the treatment had been completed, fibrin coatings were observed (fig. 3 A, B). Persistent pain during swallowing subsided. The patient was discharged in good general condition.

DISCUSSION

Literature data show that human papilloma virus (HPV) infection may be of big significance in benign and malignant neoplasms of the head and neck. Viral fragments have been detected in 22-83% of patients with head and neck carcinomas. Type 16 and 35 viruses with high oncogenic potential have been detected

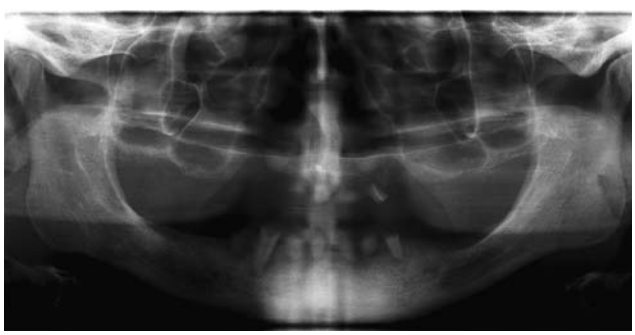

Fig. 1. Orthopantomogram.

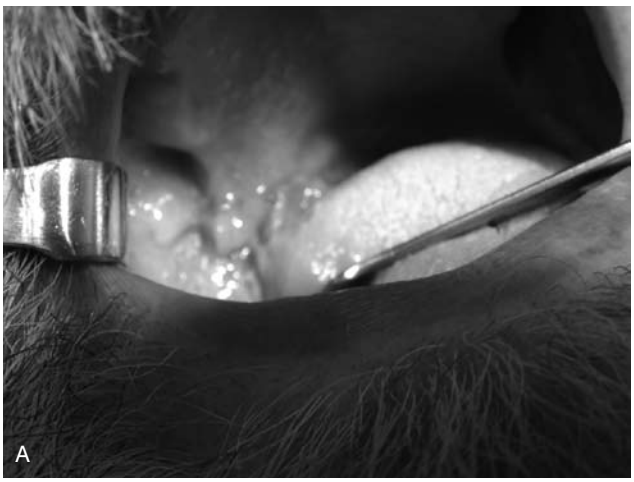

Fig. 2. Macroscopic view of the oropharyngeal cancer detected in the patient.

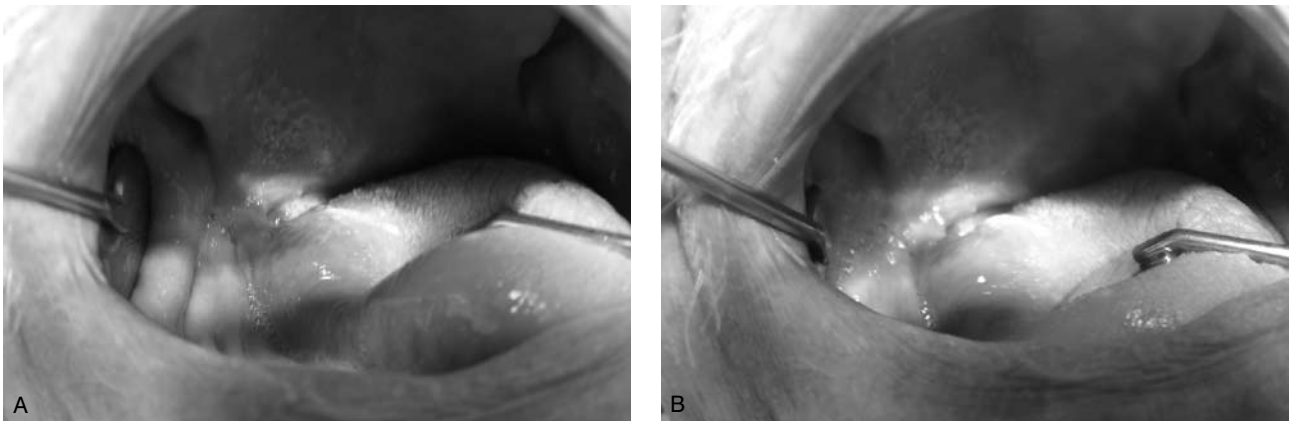

Fig. 3. Spot-shaped fibrin coatings in the patient.

in patients with squamous cell carcinoma of the larynx and glottis. A case of a patient with a highly oncogenic HPV virus type detected and concurrent squamous cell carcinoma of the oropharynx is presented in this study. The case presented may confirm global reports on links between occurrence of human papillomavirus (HPV) and squamous cell carcinoma of the oral cavity. Basing on studies by many authors, it is suggested that this virus is one of the most important oncogenic factors participating in neoplastic transformation in squamous cell carcinoma of the oral cavity.

It is scientifically evidenced that risk factors for neoplastic transformation include alcohol abuse, smoking cigarettes and poor oral hygiene. The patient was exposed to all of these factors. Highest incidence with predominance in men is in the 50-70 years age group, but it may also pertain to younger patients. Results of many studies show that men perform oral hygiene procedures less frequently and abuse alcohol more often as compared with women.

It is worth noticing that working site conditions and exposition to many carcinogenic factors are of big significance in neoplasm of not only head and neck. The factors include: condition of machines in a manufacturing plant, access to protective clothing, exposition to chemical compounds with high carcinogenicity and working space. The patient presented has worked for most of his life in the printing industry. Such a work involves long exposure to many carcinogenic factors, including highly volatile chemical compounds, which are breathed in every day during an eight-hour working day.

The aforementioned environmental factors mentioned by authors of publications have a significant impact on occurrence of a neoplasm in human population. In the case presented it was squamous cell carcinoma. □

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