

HUMAN PAPILLOMAVIRUS (HPV) & ORO-PHARYNGEAL CARCINOMA

Summary

There are several sub-types of the human papillomavirus (HPV) varying in their ability to infect people and in their potency as an infection. It is now known that HPV is associated with the increased prevalence of oro-pharyngeal carcinoma (OPC) accounting for around 70% of OPC cases. HPV is also related to cervical cancer in females and to ano-genital and penile cancer in men. Associated risk factors include the age of onset of sexual activity, increased number of sexual partners and unprotected sexual practices. HPV-associated cancers are of relevance to dentists who should examine the oral soft tissues of all patients. Any oral ulcers that persist for more than 14 days ought to be examined to ensure early and correct diagnosis of any unusual lesions in the mouth.

Sites of HPV infection

The area of the mouth and throat affected by OPC include the back of the tongue, tonsils and the rear of the palate/soft palate. Cancers of the mouth and oro-pharynx are increasing in several developed countries especially in males and now constitute the 6th most common cancer globally. 5-year survival rates for OPC are around 50%.

Symptoms of OPC

Symptoms of OPC include sores in the throat and palate, mixed red and white soft tissue lesions in the throat and near the tonsils, unexplained lumps in the throat often only detected by difficulty swallowing, a persistent sore throat, changes in the voice including hoarseness, changes in sensation in the throat including numbness or unexplained pain, bleeding from the throat detected when spitting out saliva or mucous, difficulty chewing or swallowing, unexplained loss of weight and fatigue, ear or posterior jaw pain and loss of appetite.

Incidence of HPV-associated OPC

The World Health Organisation declared HPV-associated OPC the most common sexually transmitted infection (2018) globally. They also stated that oro-pharyngeal squamous cell carcinoma (OPSCC) has one of the most rapidly increasing incidences of ANY CANCER in the higher income countries and it affects primarily males and younger people.

Risk factors for HPV-associated OPC

Risk factors for HPV-associated OPC include early onset of sexual activity, multiple sexual partners, oro-genital behaviours, non-protected sexual activity, tobacco smoking, high alcohol intake and immuno-suppression.

Improved clinical outcome for HPV-associated OPC

HPV-associated tumours have better treatment outcomes due to fewer and different genetic mutations in the affected cells allowing treatment to achieve better outcomes. The HPV-associated OPC also has a higher radio-sensitivity improving cell death in response to irradiation. HPV-associated OPC is more sensitivity to chemotherapy due to improved immunological responses directed at viral-specific tumour antigens. These factors that render the HPV-associated OPC more susceptible to treatment and the fitter, healthier status of the younger group of patients affected all contribute to improved cancer survival rate for this condition.

Prevention of HPV-associated OPC

Prevention against HPV-associated OPC includes avoiding those risk factors identified above. This includes delayed onset of sexual activity, adopting protected sexual activities, regular Pap-testing for females, avoidance of smoking and minimising alcohol intake and the adoption of vaccination.

Vaccination against HPV

Many countries have initiated vaccination in boys and girls of school age. Immunization against HPV is available and protects against both HPV-associated OPC and cervical cancer. Side effects are generally mild and may include fainting, dizziness and headache while the vaccine exerts its immunological effects. There have been very few reports of any serious side effects and in most cases the more severe outcomes were explained by factors other than the vaccination. The most recent HPV vaccine offers almost 100% protection from nine of the most common subtypes of HPV.

The Advisory Committee on Immunisation Practices (ACIP) and the Centres for Disease Control and Prevention (CDC) recommend routine vaccination of boys and girls around the ages of 11-12 years. There are additional guidelines for people who have other risk factors who were not vaccinated as children. People in the age group 27-45 who have not been vaccinated may discuss any personal risk factors with their GP to determine if there is any benefit from late vaccination. Given that many people in this age range have already been exposed to HPV, vaccination provides less benefit to them.

Further investigations for HPV-associated OPC

Endoscopy of the oro-pharynx, HPV testing, Cervical screening and Pap testing for females, oral brush biopsy are all used in testing for HPV associated conditions.

Dental significance of HPV-associated OPC and other oral cancers

If an ulcer is found in the mouth, it usually heals within 2-3 weeks. Any ulcer that persists for a longer period should be reviewed by a dentist as there are several other systemic conditions that

can manifest as an ulcer in the mouth. One of these possible alternative diagnoses of an oral ulcer is oral cancer. Cancers in the mouth are commonly squamous cell carcinoma but other forms of cancer also exist, including HPV-associated OPC.

The earlier a cancer is diagnosed in the mouth, the better the clinical outcome will be for the patient. The best solution for any cancer is early detection, early diagnosis and early treatment.

To achieve early diagnosis of oral cancer, it is sensible to have an oral examination performed by a dentist every year. This should be done for all patients, even those who wear complete dentures and have no natural teeth remaining so that all the soft tissues can be checked.

As we age our immune system may become less well organised and can become defective allowing cells that have mutated, to grow and this gives rise to the development of cancers. Therefore older patients are more at risk of oral cancers than younger patients.

There are particular risk factors that contribute to higher incidence of oral cancer. Such risk factors include older age, smoking and higher alcohol intake along with a family history of malignant cancers.