

Oral Cancer

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Abstract

Epidemiological studies have provided a stronger association between tobacco use and oral cancer. The alcohol is also a significant risk factor, having a multiplicative synergistic cancer promoting effect with tobacco. Biannual dental checkups are very important to keep dentists up to date about oral health of their patients. Risk factors for developing oral cancer other than tobacco and alcohol are dental causes which act as a trigger, occupational exposure, HPV, EBV, HIV, Herpes simplex infection, as well as immunological and genetic predisposition. The screening methods used are toluidine blue, VEL scope, bush biopsy, tissue biopsy. The diagnosis is made clinically, histopathologically, and with a imaging tests. Imaging tests for oral cancer are Computed Tomography (CT) Scan, Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET). Depending on the type, location, and stage of the cancer at diagnosis, treatment for oral cancer will be very different. Treatment at early stages of oral cancers usually involves surgery to remove the tumor and cancerous lymph nodes.

Radiation therapy, Chemotherapy medicines and Biological therapies could be also involved. The literature has even described attempts to treat oral cancer with gene therapy.

Keywords: Oral cancer, Human papillomavirus, Oropharyngeal Squamous Cell Carcinoma (OSCC)

Oral cancers belong to a larger group of cancers called head and neck cancers. Most develop in the squamous cells found in your mouth, tongue, and lips.

The dentists are often the first healthcare provider to notice signs of oral cancer. Because of that biannual dental checkups are very important to keep dentists up to date about oral health of their patients. Men are more exposed to oral cancers than woman.

Annually around 500 000 new cases of oral and oropharyngeal cancer are diagnosed, and three quarters of them are in developing countries. In line with its mission to lead the world to optimum oral health, FDI has developed guidelines for use in dental medicine to predict, diagnose and treat oral cancer [1,2].

Risk factors for developing oral cancer include cigarettes and alcohol [3,4], followed by dental causes that act as a trigger, occupational exposure [5], HPV [6-8], EBV [9,10], HIV [11] Herpes simplex infection [12,13], as well as immunological and genetic predisposition [14].

The premalignant oral lesions, such as red or white spots in the mouth, precede the occurrence of oral cancer in more than 70% of cases. The most common areas where oral cancer occurs are the tongue, the inner walls of the cheeks, the bottom of the oral cavity, the soft palate, and the dentists have a good chance of screening high-risk patients for early detection of oral cancer [15].

The diagnosis is made clinically, histopathologically, and with a imaging tests. Imaging tests for oral cancer are Computed Tomography (CT) Scan, Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) [16]. CT scan may provide information about the size, shape and position of any tumors, and may also help identify enlarged lymph nodes that may contain cancer cells. Magnetic

Resonance Imaging (MRI) may be particularly useful in determining whether or not the cancer has spread, either to other areas in the neck or other regions of the body in very detailed view. X-rays to see if cancer cells have spread to the jaw, chest, or lungs. Also with the ban endoscopy the nasal passages, sinuses, inner throat, windpipe, and trachea can be examined.

A PET scan can be used to determine if cancer has spread to the lymph nodes or to check the patient's body for the spread of cancer cells. Also PET scan can determine the cancer's origin in the cases when cancer is found in the lymph glands firstly [17].

Biopsy can be made by puncture and excision.

It occurs as a wound that does not heal after 4 days and is accompanied by paraesthesia, dysphagia, dysarthria. In the starting stage are painless.

The screening methods used are toluidine blue [18], VEL scope [19], bush biopsy, tissue biopsy. A brush biopsy is a painless test that collects cells from the tumor by brushing them onto a slide involves removing a piece of the tissue so it can be examined under a microscope for cancerous cells. Toluidin stains DNA and accumulates in intercellular spaces. Vel scope is a non-invasive method that works with autofluorescence of light from 330-440 nanometers. It has a sensitivity of 72.4% and a specificity of 63.79%. Velcope is a noninvasive method for the visualization of oral cancer based on autofluorescence.

The earliest stage in which OSCC can be detected is carcinoma in situ. Depending on the type, location, and stage of the cancer at diagnosis, treatment for oral cancer will be very different. Treatment at early stages of oral cancers usually involves surgery to remove the tumor and cancerous lymph nodes.

Radiation therapy *is carried out* with the aim radiation beams *to be directed* at the tumor once or twice a day, five days a week, for two to eight weeks. Treatment for advanced stages will usually involve a combination of chemotherapy and radiation therapy.

Chemotherapy medicines are given to the patients with oral cancers either orally or through an intravenous line [20]. Most patients get chemotherapy on an outpatient basis, although some require hospitalization. Targeted (biological) therapy drugs will bind to specific proteins on cancer cells and interfere with their growth.

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Biological therapies are drugs that change the way cells work and help the body control the growth of cancer. Cetuximab (Erbix) is a monoclonal antibody sometimes used to treat mouth cancer [21]. Biological therapy with Erbix is very expensive therapy, which is only given to certain patients. It acts on planococcal carcinoma, wherever it is located in the digestive system of man.

The literature has even described attempts to treat oral cancer with gene therapy [22].

It is necessary to educate the dentists for the early diagnosis of OSCC (Oral Squamocellular Carcinoma) and integrate the information on OSCC in the national health system [23]. Vascular Endothelial Growth Factor (VEGF) is considered as a prime mediator of angiogenesis and has been implicated in carcinogenesis and metastasis [24,25]. A meta-analysis was conducted with eligible studies which quantitatively evaluated the relationship between VEGF overexpression and survival of patients with oral cancer. Zhao SF et al., [26] conclude that VEGF over expression indicates a poor prognosis for patients with Oral Squamous Cell Carcinoma (oral SCC), Adenoid Cystic Carcinoma (ACC), and Mucoepidermoid Carcinoma (MEC) of the salivary glands.

Oral Squamocellular Carcinoma (OSCC) commonly occurs on a healthy mucous membrane.

Despite recent advances in cancer diagnoses and therapies, the 5-year survival rate of oral cancer patients has remained at a dismal 50% in the last few decades [27]. The earlier the stage at diagnosis, the higher the chance of survival after treatment.

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