

ORAL CANCER: THE ROLE OF THE DENTAL HYGIENIST

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In the fight against oral cavity diseases, the dentist finds a valuable ally in the dental hygienist. The primary role of the dental hygienist is to preserve the patient's oral health by promoting regular screenings of the entire mouth and encouraging patient education on proper habits for maintaining oral health.

In this interesting article, Professor Silvio Abati and his collaborators delve into the fundamental role of the dental hygienist in the screening of oral cavity diseases.

What is Oral Cancer

Oral cancer is a devastating, serious, and potentially fatal malignant disease with enormous consequences for affected patients, their families, and society. Oral cancer is one of the few deadly diseases of oral origin that oral health professionals may encounter in their professional activities.

Oral cancer affects approximately 400,000 people worldwide each year and about 5,000 in Italy, and in 95% of cases, it is a squamous cell carcinoma, a malignant tumor originating from the epithelium of the oral mucosa.

Despite significant progress in the fields of diagnosis and surgical, pharmacological, and radiation therapies, the relative survival of patients with oral cancer is among the worst of major malignant tumors. After five years, only just over half of affected patients are still alive. The survival rate has not significantly improved since the 1970s, unlike for other malignant neoplastic diseases.

In recent decades, the stage of the disease at the time of diagnosis has not significantly

changed. The involvement and training of all interested professional figures, including dentists, dental hygienists, general practitioners, and other medical specialists, are essential for the early diagnosis of oral cancer and the reduction of the disease's impact and mortality in affected patients.

Current scientific evidence highlights that early diagnosis of oral cancer is crucial for improving patient survival and quality of life, reducing the morbidity associated with the disease, and containing public economic costs for therapies, rehabilitation, and social and productive reintegration of affected patients.

Although dental hygienists are not usually directly involved in the specific diagnostic and therapeutic phases of oral cancer, they play a fundamental role in promoting lifestyles useful for disease prevention, identifying oral tissue alterations, setting up a proper and rapid diagnostic process for patients with pathological alterations of the oral mucosa, and assisting oral cancer patients in promoting correct and optimal oral hygiene to minimize the consequences of oncological therapies.

Dental hygienists receive specific training in their studies to evaluate all oral tissues and distinguish between normal, healthy tissues and abnormal or diseased tissues. They also have the necessary information to refer patients to appropriate reference centers for subsequent diagnostic and therapeutic steps.

The promotion of overall oral health should also be pursued by the dental hygienist through their clinical function and health education, informing and advising patients on the risks associated

with tobacco and alcohol use, promoting non-risky lifestyles, instructing on maintaining high standards of oral hygiene, conducting a complete clinical examination of the oral cavity at regular intervals, and promptly setting up an appropriate diagnostic process in case of lesions or pathological conditions of the oral mucosa.

Identification of Pathological Alterations of the Oral Mucosa

Given the nature of clinical activities in the field of dental hygiene and the regular intervals at which they occur, the dental hygienist has the opportunity to visit and observe the oral cavity of patients frequently.

For these reasons, the dental hygienist can periodically examine the patient's oral cavity, even if the patient does not report specific mucosal symptoms, and early intercept potentially malignant and cancerous lesions and alterations.

If the patient does not report mucosal symptoms, a thorough clinical examination of the oral tissues can identify alterations while they are still asymptomatic, allowing the dental hygienist to perform an "opportunistic" screening of oral cancer or potentially malignant lesions.

In the clinical activity of the dental hygienist, there is also a particular focus on the anamnestic investigation of the patient's risky lifestyles, such as smoking habits, alcohol consumption, and poor diet, behaviors that increase the specific risk not only of oral cancer but also of gingival-periodontal and dental pathology.

A thorough and extended oral clinical examination, following a standard protocol, allows for the examination of the characteristics of the oral tissues, particularly the mucosae, with particular attention to the most frequent sites of oral squamous cell carcinoma and noting deviations from normal tissue characteristics in terms of surface characteristics, color,

consistency, and mobility.

The clinical-healthcare pathway useful for the early diagnosis of oral cancer must include the planning and execution by the dental hygienist of a complete clinical examination of the oral cavity tissues in all new patients and all patients over 40 years of age, at least during annual check-ups.

Clinical Examination of the Oral Cavity

It is important to adopt a standardized clinical procedure for the objective clinical examination of the tissues that allows for a methodical examination of the different areas of the oral cavity. During the objective examination, the state of the oral tissues is evaluated through inspection and digital and bimanual palpation. The structure, consistency, and mobility of the oral mucosa over submucosal tissues should be assessed.

With the mouth closed, the perioral area around the lips, lips, and commissures are inspected. The inspection of the mucosa begins by turning the patient's lips outward, first the lower lip, then the upper lip, observing the color and state of the lining mucosa of the oral side of the lip; then, the structure of the labial wall is appreciated by palpating the tissues between the thumb and index finger, with one kept outside and one inside the oral cavity. With the index finger inserted into the oral vestibule, the vestibular fornix mucosa is palpated from the anterior labial region to the posterior retromolar region on both sides.

With the mouth open, the inner walls of the cheeks are inspected, holding them with the mirror. With the mirror, the soft tissues of the lateral vestibular fundus are observed, and the mobile alveolar mucosa and vestibular gingiva are inspected. The tissues of the hard and soft palate are inspected and palpated, reflecting light from the light source with the mirror.

The patient protrudes the tongue, which is gently held by the tip using a gauze square. By displacing the tongue laterally, upward, and

downward, it is possible to inspect and palpate its dorsal, lateral, and ventral surfaces and then the oral floor to the root of the tongue. The normal and pathological structures of the oral floor can be better appreciated with bimanual palpation; the objective examination of the endoral soft tissues concludes with the palpation of the regional cervical lymph nodes.

The base of the tongue can be visualized using the mirror when the tongue is fully extended. The mirror is also used to slightly depress the tongue while the patient says “aaah” to allow for adequate examination of the tonsillar and oropharyngeal areas.

Whenever possible, it would be helpful to document an alteration or lesion by taking photographs, informing the patient and obtaining their consent, using a camera or a properly adjusted cell phone.

A routine oral clinical examination with the recognition and early diagnosis of tumor lesions can impact patient survival more than any other available medical procedure.

Signs and Symptoms of Oral Cancer

Oral cancer can manifest clinically with a localized and persistent alteration in the color of the oral mucosa, such as a patch or plaque that is white, red, or variegated white and red, with an ulceration that does not heal or bleeds easily, with a swelling or thickening or a new growth in the mouth, that is, with a productive or infiltrative lesion causing tissue hardening.

Most initial oral cancer lesions are indolent and identifiable only with a thorough clinical examination of the oral cavity, which includes inspection and palpation of all oral mucosa sites. More advanced forms present with nodular, ulcerated, vegetating, or infiltrative lesions, and the growth of the lesion with infiltration of surrounding tissues often causes pain and difficulty in chewing and swallowing or phonation changes.

More frequently, malignant lesions are located on the lateral borders of the tongue, the oral floor, and the retromolar trigones; less common sites are the gingiva, buccal mucosa, and palate.

Auxiliary Tools for Detecting Mucosal Alterations

Clinicians who perform objective oral cavity examinations, including dental hygienists with adequate knowledge of their use, have additional screening tools available, such as direct visualization of oral tissue autofluorescence. These tools can be considered complementary to visual intraoral and extraoral examinations. Autofluorescence evaluation is emerging as a promising method in differentiating pre-tumoral and tumoral mucosal areas, which does not replace the histological diagnosis of lesions but can help identify altered areas of oral mucosa with pre-tumoral lesions containing dysplasia zones or already clearly tumoral lesions (Figures 1a-b, Figures 2a-b).

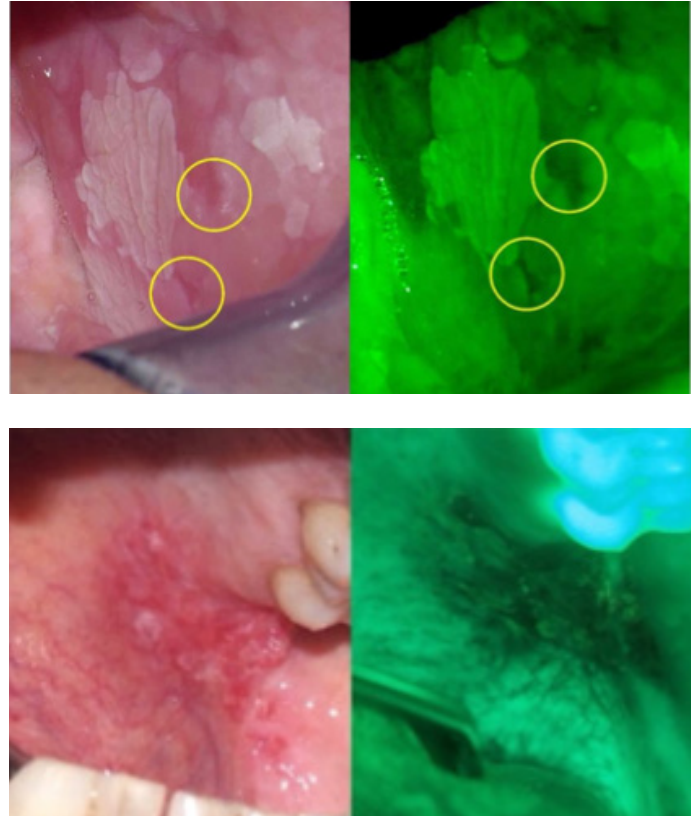


Fig 1 a and b: : detection of tissue autofluorescence. In the photo on the right taken with Goccles® by Pierrel, the loss of autofluorescence highlights erythroleukoplakia of the genial mucosa.

Detection of Oral Mucosa Alterations

If any alteration or lesion of the oral mucosa is detected, the dental hygienist should refer the patient to the dentist, who, after removing local irritants and possibly prescribing appropriate therapy, can plan an appointment within 2-3 weeks to check for the persistence or resolution of the detected alteration.

If the lesion persists beyond three weeks or has characteristics suggestive of malignancy (hardening, infiltration, bleeding, persistence), the patient should be promptly referred to a reference center where the necessary measures for definitive diagnosis and appropriate treatment can be taken.

After detecting an alteration or lesion, the patient should be referred to the dentist for subsequent diagnostic confirmation steps with a referral letter that includes demographic information, anamnesis, risk factors, the detected tissue alteration, and any other relevant information, including clinical photographs of the lesion and any photograph taken using autofluorescence devices.

Conclusions

The recommendation to subject all patients to an oral cavity clinical examination as part of routine care provided by the dental hygienist and during periodic recalls is justified by the simplicity of the procedure and the low implied risk compared to the benefits of early diagnosis of oral cancer.

Through a thorough clinical examination and detailed anamnesis, the dental hygienist can intercept not only asymptomatic lesions but also intercept early cases of oral cancer, thus contributing to reducing the incidence of this severe pathology and improving patient outcomes through timely and appropriate interventions.

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Odontoiatria di comunità: criteri di appropriatezza clinica, tecnologica e strutturale
ISSN 2038-5293 7