The term “oral cancer” encompasses lesions or growths that originate in the oral tissues. Squamous cell carcinoma of the oral mucosa and lips, however, comprise 90–95 percent of all malignancies.

Oral cancers are one of the most common cancers, constituting almost 50 percent of all cancers diagnosed in males with an overall incidence of 3.8-11 per 100,000 population. The disease usually presents in advanced stages.

It is surprising that a site, which is most accessible for daily self-examination, can become dead on arrival to death. Oral cancer is a preventable disease that can be greatly controlled by public education, surveillance, and health education.

Incidence

In developed countries oral cancer is less common, but it is the eighth most frequent form of cancer overall. However, the ranking varies greatly among countries.

“Squamous cell carcinoma comprises 90–95 percent of all malignancies.”

Estimates show that in 1980, more than 32,000 new cases of oral cancer were diagnosed throughout the European community. The prevalence of lip cancer appears to be decreasing, but the prevalence of intraoral cancer appears to be rising in many countries, especially in younger populations. This is especially true in Central and Eastern Europe. In the South American, the incidence varies from 4.4 (Cali, Colombia) to 15.4 (India). In Australia and New Zealand, it varies from 2.6 (New Zealand—Maori) to 7.5 in South Australia.

The prevalence of tongue cancer is consistently found to be higher (by approximately 50%) in blacks compared with whites within the same regions of the US. The prevalence of oral cancer is also generally higher in ethnic minorities in underdeveloped countries. Males are affected more frequently than females, although the ratio is equalizing and is predominantly found in middle-aged and older persons. The sex differences in some population groups could be a direct consequence of the sex distribution of tobacco users.

For instance, in an epidemiological study in India, it was found that the M:F ratio of oral cancers in patients aged 50 years and older was 10:1, in contrast to the usual 1:1 ratio. It is possible that the smoking habits of middle-aged and older persons differ from those of younger people.

“Oral cancers are one of the most common cancers.”

Functional TSGs seem to assist growth control, while their mutation or deletion results in loss of these control mechanisms. The regions most commonly implicated in squamous cell carcinoma include chromosome 3, 9, 11 and 17, but multiple other genes are being discovered. Carcinogen-metabolizing enzymes are implicated in some patients. Alcohol dehydrogenase oxidizes ethanol to acetate and ethylene, which is cytotoxic and results in the production of free radicals and DNA hydroxylated bases; alcohol dehydrogenase type 3 genotypes appear predisposed to OSCC. Cytochrome P450 can activate many environmental procarcinogens.

Pathology

The most common cancer within the oral cavity is squamous cell carcinoma. Other pathological types—adenocarcinoma, adenoid cystic carcinomas and mucosquamous carcinomas—are much less common. The most common sites include the tongue, floor of mouth, gingiva, palate and buccal mucosa. A lump or mass in the neck.

“Early carcinomas may not be painful, however; later they may cause pain and difficulty with swallowing.”

Principles of Diagnosis

Potentially malignant lesions and OSCC should be detected at an early stage, however, many oral tumors still are seen only when advanced. Diagnosis is often delayed by up to 6 months, even in developed countries, despite exhortations over the past 25 years.

The prevalence of intra-or oral cancer appears to be rising in many countries, especially in younger people."

“Oral cancers are one of the most common cancers.”

It is usually associated with the consumption of alcohol. In the West 90% of sufferers have association with HPV and 50% with Candida albicans. It is commonly seen in the Indian subcontinent, and 50–70% develops in cancer in 5–10 years.

“Warning signs of Oral Cancer”

• A sore in the mouth that does not heal (most common symptom).
• A white or red patch on the gum, which alters the thong of the mouth that will not go away.
• Difficulty chewing or swallowing.
• Difficulty moving the jaw or tongue.
• Lump or mass in the neck.
• Weight loss.

Early carcinomas may not be painful, however; later they may cause pain and difficulty with swallowing.

“An observable symptom of epithelial dysplasia is a sore in the mouth that does not heal.”

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“Without therapy, 60–90% of erythroleukias may turn into cancer in 5–10 years.”

The head and neck cancer team is comprised of surgeons, radiation oncologist, medical oncologist, nurse, professional counselor, speech and language pathologist, prosthodontist, nurses and a pharmacist. The dismal scenario can be improved by providing basic training and knowledge of speech and swallowing to the treating surgeons and postoperative therapist and medical oncologist.

Most of the tumors present in advanced stages, necessitating therapy and adjuvant RT. Both these therapies lead to major deterioration in speech and swallowing. Lack of knowledge of various interventions—e.g., jaw/lower-arch exercises, thermal stimulation, augmentation prosthesis, speech exercises—continues to limit the treating team to accept these disorders as non-surgical treatable conditions.

Not only surgery but radiation also affects the physiology of swallowing. Loss of sensation, keratosis, post RT fibrosis, mucositis, edema are some of the causative factors. All these can be effectively handled by proper pre-treatment counseling and post-treatment rehabilitation.

There is a need to identify speech and swallowing abilities as a rehabilitation as an essential part of head and neck cancer treatment. An effective surgical approach does not mean disappearance of a tumor following surgery. RT chemotherapy, but restoration of altered functions as well.

Follow-up & Prevention

The oral cavity is easily accessible, therefore primary diagnosis is essential, thus, without the aid of any sophisticated methods, oral cavity cancer can be detected in its early stages. The detection of this disease in its early stage still remains the most important aspect of prevention. Oral cancer prevention can be attempted at a primary as well as a secondary level in clinics, at hospitals and in large population centers.

In primary prevention, avoiding exposure to tobacco reduces the risk for cancer development. This can be implemented in the form of a community approach where the risk of tobacco addiction is eliminated without the individual’s direct participation. The program should be addressed through individual approach designed to motivate each individual to abandon habits to quit their habits, or discourage people, especially young, from acquiring such habits. The implementation of primary prevention may require media such as films, television, radio, newspapers, posters and also involves personal communication by doctors and social workers.
While the advantage of primary prevention lies in tackling the problem at a grass-roots level, it has its limitations. One of them is that it requires long sustained efforts under close monitoring. Second, the achievement of a drop in the incidence rates of oral cancer requires a significant amount of time. These limitations point to the importance of secondary prevention.

This form of prevention consists of early diagnosis of oral cancer and management of suspected precancerous lesions. The treatment of early cancers will lead to better prognosis, and the management of the precancerous lesions and conditions will prevent their progression to cancer. As the aim of secondary prevention is to improve the prognosis, this approach entails periodic re-examination of high risk group populations. In areas where the incidence of oral cancer is high, secondary prevention may appear as an immediate necessity. The practical difficulty in implementing this form of prevention, however, is the lack of sufficiently trained professionals and limited resources in developing countries.

Proper education and community-based early detection programmes coupled with proper treatment can be expected to be more efficient than the current treatment programmes alone.

Further Reading

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