

Oral cancer: Treatment aspects

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The management of oral cancer has undergone radical changes in the last decades and continues to evolve rapidly. Discoveries in molecular biology, diagnostic techniques, surgery, radiation therapy and medical oncology have altered many traditional concepts.

Oral cancer is best managed by a team of health care professionals who have a sufficient number of patients to develop the experience necessary to provide excellent care. All cases should be reviewed by a tumor board, consisting of pathologists, radiologists, surgeons, radiation oncologists and medical oncologists. The participants discuss with each case in depth to optimize treatment planning. Other team members include general dental practitioners, nurses, speech pathologists, prosthodontists, restorative dentists and nutritionists. This multi-disciplinary team (MDT) of health professionals work together to decide the best way forward for each patient. The MDT includes a variety of doctors and other health professionals who specialize in different aspects of treatment, such as Oral and maxillofacial surgeons, Oncologists, Plastic surgeons, ENT surgeons, Prosthodontists, Conservative dentists and Speech therapists.

The fact that various specialties have overlapping interests no way distracts from the ability of one or all of them to deal with problems that may arise in intraoral malignancy. What is certain, however is that oral and maxillofacial surgeons, ENT surgeons and plastic surgeons have had in their training, considerable exposure to general surgery, surgery of malignancy and specifically, to malignancy in the head and neck region. The expertise of all these surgical specialties cumulated together can have always a better outcome in this challenging field of malignancy.

The controversies over treatment modalities still exist, however there are choices and the treating doctor may use either of the treatment modalities or in combination depending upon type, extent, site and nodal status.. In controlling cancer, radiotherapy can work as well as surgery for early stage cancer of oral

cavity and oro-pharynx. The choice can be difficult but the multidisciplinary team will be able to decide the best option for the patient. The patient may wish to get a second opinion before the treatment. A second opinion may confirm what one specialist has said, but can give more information and help to feel more confident treatment plan.

Surgery is a common treatment for mouth and oropharyngeal tumors and it also depends on the size, site, extent and nodal status. Surgery works very well for early stage oral cancer. For some very early cancers of the mouth and oropharynx, laser surgery under local or general anesthetic, can be performed although this is not common.

Planning the surgery, the surgeon will examine the area surrounding the tumor and during operation may remove some of the lymph nodes from and around the tumor. This is called as neck dissection. This is done to help find the stage of cancer, to remove any remaining cancer cells, and also to lower the chance of recurrence. Neck dissections are also sometimes done for patients with negative nodes. The aim is to try and stop the recurrence. This also gives the surgeons more information to decide whether to go for post-operative radiotherapy.

Management of the node-negative (Stage N0) neck using selective neck dissection now is the standard when the estimated possibility of metastasis approaches 20 percent. The supraomohyoid neck dissection, which involves removal of lymph nodes from levels I through III while preserving the internal jugular vein, spinal accessory nerve and sternocleido-mastoid muscle, is the operation of choice. However, in cases of tongue cancer, level IV nodes often are removed as well. Using the tumor size (T2-4), site, depth (> 4 millimeters) and other criteria (such as perineural invasion), surgeons can predict which patients with clinical and radiologic N0 neck are at increased risk of developing occult micrometastases¹. The surgeon may recommend radiotherapy after surgery. This lowers the risk of the

recurrence. Radiotherapy alone is used to treat some types of oral and oropharyngeal cancers that have not undergone regional or distant metastasis.

Sophisticated planning using three-dimensional CT images of the tumor permits conformal radiation therapy. This has allowed directed irradiation and the development of intensity-modulated radiation therapy (IMRT). IMRT is a technique that delivers a homogenous dose of radiation focused at the target site, but consists of a spatially nonuniform radiation exposure from various points of reference that minimizes radiation exposure to healthy tissue. The concept of a more conformal radiation dose with less tissue damage and subsequently less morbidity is attractive in the head and neck².

Recent reports have shown that the ability to reduce parotid gland exposure significantly reduces subsequent xerostomia and improves quality-of-life scores². Radiotherapy may be combined with chemotherapy for people with locally advanced cancer. With radiotherapy as part of your main treatment, chemotherapy is also used in treating head and neck malignancies. Chemotherapy may be used to treat some oral and oropharyngeal cancers that are locally invasive or have spread to other parts of the body and the tumor recurs even after surgery and radiotherapy. Chemotherapy and radiotherapy together (chemoradiation) are at times used to treat oral or oropharyngeal cancer.

Reports so far show that this treatment can keep these types of cancers under control for long periods in some people. Combination chemoradiation therapy is used after surgery for patients with poor-prognosis stage IV cancer, for patients with unresectable stage IV disease and in protocols for organ preservation. Despite its popularity, neoadjuvant chemotherapy has not been shown to improve survival rates, and few data exist for adjuvant chemotherapy after radiation therapy^{3,4}. However, the use of concurrent chemotherapy and radiation therapy has been shown to increase survival rates in patients with head and neck cancer⁵.

If tumor has already spread to another part of the body, surgery alone to remove the tumors in oral cavity or oropharynx will not cure the cancer, but surgery may still help to control the symptoms and disease. For example, if the tumor is large and beginning to block the airway, the surgeon may recommend surgery to remove all or part of the tumor to ease respiration. They may also suggest surgery combined with radiotherapy.

The importance of receiving a comprehensive dental evaluation and treatment before cancer treatment is illustrated by osteoradionecrosis. All

patients who are to receive chemoradiation therapy should have unsalvageable teeth removed, periodontal health maximized and fluoride therapy instituted. Osteoradionecrosis is a feared complication for patients, requiring tooth extraction after radiation therapy, and the risk does not appear to diminish with time. Concepts of reversing radiation-induced tissue damage by the use of hyperbaric oxygen (HBO) therapy are based largely on the work of Marx^{6,7}. Although nonsurgical therapy with HBO will help many patients who have osteoradionecrosis, mandibular resection and reconstruction may still be required for some cases. All patients who require extraction of teeth in an irradiated field should be considered at risk of developing osteoradionecrosis. Prophylactic HBO therapy must be considered when appropriate⁸.

The mainstay of current therapy for oral cancer is surgery and radiation treatment. Advances in molecular biology have explained the genetic alterations that lead to development of carcinomas. This provides hope that targeted therapy will be possible in the future. Exciting challenges include improving success rates of current therapy, reducing the morbidity of treatment, and using molecular markers to predict tumor behavior and select the most appropriate treatment. The use of molecular markers in pre-malignant lesions will allow us to develop more specific diagnostic and preventive strategies. Today, our patients have a better quality of life and improved loco-regional control. Tomorrow, our focus should be on using the continuing scientific and technological innovations to ultimately defeat this disease⁹. Despite several specialties who are working to defeat cancer, expertise combined together will definitely cumulate for a better treatment modalities and outcomes thereby circumventing mortality and morbidity tomorrow.

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