Oral Cancer Treatment

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ABSTARACT

Cancer is Latinized from Greek world "karkinos" Meaning crab, denoting how carcinoma extends its claws like a crab into adjacent tissues. Cancer is a disease caused by mutated normal cells which grow in an uncontrolled way, cause sing a lump called a tumor to form. Oral cancer sites: Tongue's surface, lips, cheek, gums, roof and floor of the mouth, tonsils and salivary glands.

Squamous cell carcinoma is the most common malignant tumor of the oral cavity. For most countries, five-year survival rates of oral cavity cancer are around 50%. The best outcome is for lip cancer, 90% of patients surviving for five years. The lowest survival was for hypo pharyngeal tumors. In general, prognosis decreases with advanced disease stage. For most countries age adjusted death rates from oral cancer was estimated at 3-4 per 100,000 male and 1.0-2.0 per 100,000 for female. It is multi factorial in origin. Recognized risk factors are tobacco, alcohol and areca nut use, infection with human papillomavirus (HPV). And many others risk factors. Dentists can be risk factors!!! Clinical appearance of potentially malignant lesions is an important predictor of malignant transformation, occurring about five years earlier than oral cancer. Both public and professional awareness of oral cancer is fundamental for minimizing the time from onset of signs or symptoms to diagnosis. All lesions of the oral cavity that persist or do not respond to the usual therapeutic measures must be considered precancerous or malignant until proven otherwise. The earliest signs of oral cancer may be mistaken for other condition such as a tonsillitis or cold. The detection of asymptomatic cancer is a significant problem. Inspection of head and neck with assessment of cervical lymph nodes and cranial nerve function can help in early detection.
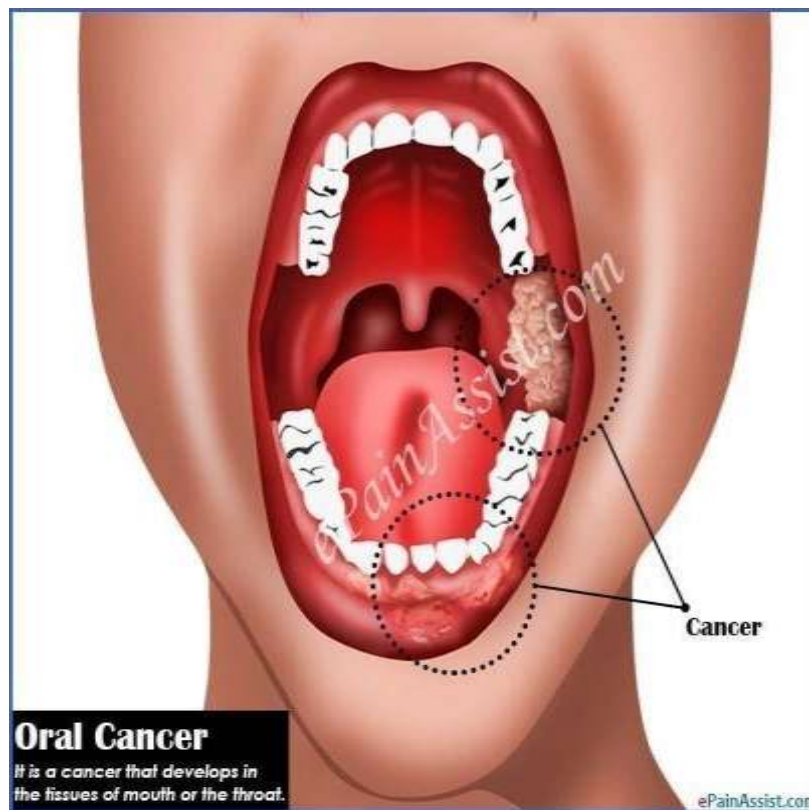
History

The disease was first called cancer by Greek physician Hippocrates (460-370 BC). He is considered the "Father of Medicine." Hippocrates used the terms carcinos and carcinoma to describe non-ulcer forming and ulcer-forming tumors. In Greek this means a crab. The description was names after the crab because the finger-like spreading projections from a cancer called to mind the shape of a crab. Later Roman physician, Celsus (28-50 BC) translated the Greek term into cancer, the Latin word for crab. It was Galen (130-200 AD), another Roman physician, who used the term oncos (Greek for swelling) to describe tumors. Oncos is the root word for oncology or study of cancers.

I.   INTRODUCTION.

Oral cancer, also known as mouth cancer, is cancer of the lining of the lips, mouth, or upper throat.[6] In the mouth, it most commonly starts as a painless white patch, that thickens, develops red patches, an ulcer, and continues to grow. When on the lips, it commonly looks like a persistent crusting ulcer that does not heal, and slowly grows.[7] Other symptoms may include difficult or painful swallowing, new lumps or bumps in the neck, a swelling in the mouth, or a feeling of numbness in the mouth or lips. Oral cancer can be prevented by avoiding tobacco products, limiting alcohol use, sun protection on the lower lip, HPV vaccination, and avoidance of paan. Treatments used for oral cancer can include a combination of surgery (to remove the tumor and regional lymph nodes), radiation therapy, chemotherapy, or targeted therapy. The types of treatments will depend on the size, locations, and spread of the cancer taken into consideration with the general health of the person.[7]

In 2018, oral cancer occurred globally in about 355,000 people, and resulted in 177,000 deaths.[5] Between 1999 and 2015 in the United States, the rate of oral cancer increased 6% (from 10.9 to 11.6 per 100,000). Deaths from oral cancer during this time decreased 7% (from 2.7 to 2.5 per 100,000).[15] Oral cancer has an overall 5 year survival rate of 65% in the United States as of 2015.[4] This varies from 84% if diagnosed when localized, compared to 66% if it has spread to the lymph nodes in the neck, and 39% if it has spread to distant parts of the body.[4] Survival rates also are dependent on the location of the disease in the

Oral Cancer
It is a cancer that develops in the tissues of mouth or the throat.

Cancer

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Overview on Oral Cancer:

The uncontrollable growth of cells that invade and cause damage to the surrounding tissue is known as cancer. Oral cancer is a cancer that develops in the tissues of mouth or the throat. Most of the oral cancer develops in the squamous cells present in the mouth, tongue, and lips. Usually oral cancers are most often discovered after they have spread to the lymph nodes of the neck. It is essential to have early detection so as to survive oral cancer.

Types of oral cancer
1 .Lip cancer
2.   Mouth cancer
3.   tongue cancer4 .Gum cancer
5. Hard palate cancer6 . Buccal mucasa

Epidemiology
Asia
Oral cancer is one of the most-common types of cancer in Asia due to its association with smoking (tobacco, bidi), betel quid and alcohol consumption. Regionally incidence varies with highest rates in South Asia, particularly Afghanistan, Bangladesh, India, Pakistan, Philippines, and Sri Lanka.[58][59] In South East Asia and Arab countries, although the prevalence is not as high, estimated incidences of oral cancer ranged from 1.6 to 8.6/ 100,000 and 1.8 to 2.13/ 100,000 respectively.[60][61]

According to GLOBOCAN 2012, the estimated age-standardised rates of cancer incidence and mortality was higher in males than females. However, in some areas, specifically South East Asia, similar rates were recorded for both genders.[60] The average age of those diagnosed with oral sarcoma cell carcinoma is approximately 51–55.[59] In 2012, there were 97,400 deaths recorded due to oral cancer.[

india
Oral cancer is the third-most-common form of cancer in India with over 77 000 new cases diagnosed in 2012 (2.3:1 male to female ratio). Studies estimate over five deaths per hour.[64] One of the reasons behind such high incidence might be popularity of betel and areca nuts, which are considered to be risk factors for development of oral cavity cancers.

PATHOPHYSIOLOGY
Oral squamous cell carcinoma is the end product of an unregulated proliferation of mucous basal cells. A single precursor cell is transformed into a clone consisting of many daughter cells with an accumulation of altered genes called oncogenes. What characterizes a malignant tumor over a benign one is its ability to metastasize. This ability is independent of the size or grade of the tumor (often seemingly slow growing cancers like the adenoid cystic carcinoma can metastasis widely). It is not just rapid growth that characterizes a cancer, but their ability to secrete enzymes, angiogeneic factors, invasion factors, growth factors and many other factors that allow it to spread.

Stages Oral Cancer:
Stage 1:
The tumor is 2 centimeters (cm) or smaller, and the cancer hasn't spread to the lymph nodes.
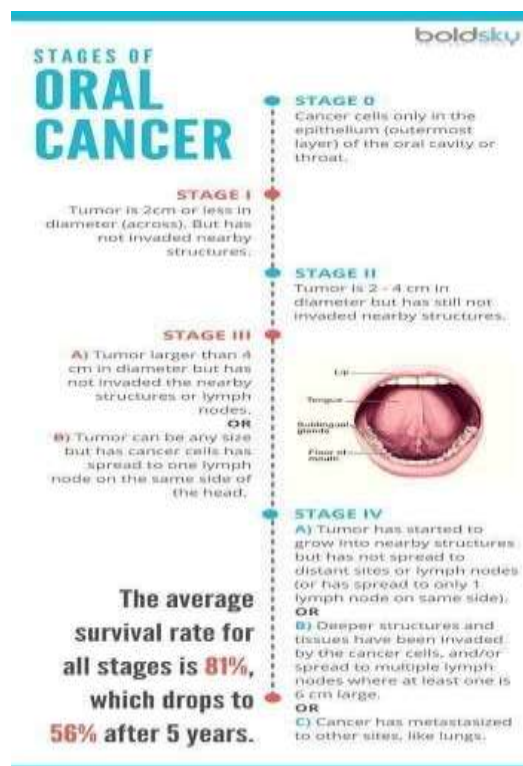**Stage 2:**
The tumor is between 2-4 cm, and cancer cells haven't spread to the lymph nodes.

Stage 3:
The tumor is either larger than 4 cm and hasn't spread to the lymph nodes, or is any size and has spread to one lymph node, but not to other parts of the body.
Stage 4:
Tumors are any size and the cancer cells have spread to nearby tissues, the lymph nodes, or other parts of the body.

Principal properties of neoplastic cells
- Abnormal growth with self-sufficient growth signalling and insensitivity to anti-growth signals
- Immortalization
- Invasion and metastasis
- Evasion of apoptosis
- Sustained angiogenesis
- DNA instability.

CYTOTO

Signs and Symptoms of Oral Cancer:
1 .Swelling or thickening or lumps, bumps etc in the tongue, lip or any other mouth areas can be a sign of oral cancer.
2 .Development of velvety red, white or white and red patches in the mouth area
3 . bleeding from the mouth can also be a symptom of oral cancer
4. Loss of feeling, numbness, etc. in the mouth area or any other portion of the face, neck etc.
5 .Soreness or a kind of feeling that something is caught in the back of the throat.
6 .Difficulty while chewing or swallowing, speaking or even moving the tongue or the jaw can be a sign of oral cancer
7 ..Hoarseness, severe sore throat or change in voice.
8 .Persistent sores on the face, neck or mouth that bleed easily and do not heal within couple of weeks
9 .A change in the way the teeth or dentures fit together 10 .Ear pain can be also a symptom
11 ..Dramatic weight loss can also be a symptom of oral cancer that requires immediate medical attention.
12. tooth pain and referral pain
13. bleeding from mouth

Causes of Oral Cancer:
Smoking cigarette, cigar, etc causes oral cancer. It is noted that smokers are 6 times more likely to get encountered with oral cancers than the non-smokers.

Chewing tobacco products, bettle nuts etc. can also develop the risk of causing oral cancers in the cheeks, lining of the lips, gums etc.

Alcohol :-Consuming excessive amount of alcohol can also cause oral cancers.It is noted that drinkers are 6 times more likely to catch oral cancers as compared to the non-drinkers.

Human papillomavirus
Infection with human papillomavirus (HPV), particularly type 16 (there are over 180 types), is a known risk factor and independent causative factor for oral cancer. Stem

cell transplantation
People after hematopoietic stem cell transplantation (HSCT) are at a higher risk for oral squamous cell carcinoma. Post-HSCT oral cancer may have more aggressive behavior with poorer prognosis, when compared to oral cancer in people not treated with HSCT.[31] This effect is supposed to be owing to the continuous lifelong immune suppression and chronic oral graft-versus-host diseas

Excessive sun exposure, especially at a young age can also cause cancer.
Diagnosis for Oral Cancer:

Oral Cancer Screening Examination:
Your dentist will get to know about any lumps or irregular tissue changes in your head, face, neck and oral cavity. While examining your mouth, he or shewill look for any discoloured tissue or sores and also check for the signs and symptoms of oral cancer.

Oral Brush Biopsy:
If your dentist finds any suspicious tissue in mouth then he or she may go for oral brush biopsy. This test is painless. It involves taking a small tissuesample and analyzing it for abnormal cells.

Scalpel Biopsy:
In case the suspicious tissue after oral brush biopsy looks more suspicious, your dentist may go for a scalpel biopsy which requires local anesthesia. The test would detect oral cancer at an early stage before it could have had a chance to

Apart from all the above mentioned tests, your dentist may also recommend you to undergo the following diagnosis procedures.
X -rays: So as to see if cancer cells have spread to the jaw, chest or the lungs.
CT Scan: This is done to reveal any tumor in the mouth, throat, neck, lungs or anywhere else in the body.
PET Scan: This is done to determine if the cancer has travelled to the lymphnodes or other organs.
MRI Scan: This shows a more accurate image of the head and neck and thus dentist can determine the extent or the stage of the cancer with an MRI scan.
Endoscopy: This is done to examine the nasal

passages, inner throat, sinuses, windpipe and trachea.

Treatments for Oral Cancer:
.Surgical Treatments for Oral Cancer:

Surgery is one of the effective modes of treating oral cancer. Surgery is usually followed by radiation therapy and chemotherapy. Macilllectomy, Mandibulectomy, Glossectomy, Radical neck dissection, Mohs surgery or CCPDMA, etc. are some of the major forms of surgeries done for oral cancer.Surgery for larger cancer is technically demanding. Reconstructive surgery may be required in oral cancer treatments, so as to give an acceptable cosmetic as well as functional result.
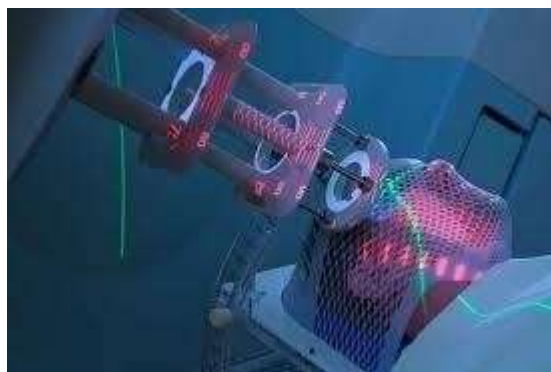
Radiation Therapy for Oral Cancer:

Radiation therapy is one more option for treating oral cancers. This treatment procedure involves the doctor aiming radiation beams at the tumor once or twice a day, 5 days a week; for about 2-8 weeks. It must be noted that treatments for advanced stages of oral cancer would require involving a combination of chemotherapy and the radiation therapy. It must be noted that radiation therapy may have some side effects which may include, sore throat, tooth decay, bleeding from gums, nausea, vomiting, jaw stiffness and pain, fatigue, skin and mouth infection, weight loss, thyroid changes etc. Thev.

Palliation Gratifying results are obtained (shrinkage of evident tumour, alleviation of symp- toms) and life is prolonged by chemotherapy in: Breast cancer Chronic lymphatic leukemia Ovarian carcinoma Chronic myeloid leukemia Endometrial carcinoma Non-Hodgkin lymphomas

Myeloma Head and neck cancers Prostatic carcinoma Lung (small cell) cancer Many other malignant tumours are less sensitive to drugs—life may or may not be prolonged by chemotherapy. Tumours that are largely refrac-tory to presently available drugs are:

Medical use of radiation therepy:
Different cancers respond to radiation therapy in different ways.

The response of a cancer to radiation is described by its radiosensitivity. Highly radiosensitive cancer cells are rapidly killed by modest doses of radiation. These include leukemias, most lymphomas and germ cell tumors. The majority of epithelial cancers are only moderately radiosensitive, and require a significantly higher dose of radiation (60-70 Gy) to achieve a radical cure. Some types of cancer are notably radioresistant, that is, much higher doses are required to produce a radical cure than may be safe in clinical practice. Renal cell cancer and melanoma are generally considered to be radioresistant but radiation therapy is still a palliative option for many patients with metastatic melanoma. Combining radiation therapy with immunotherapy is an active area of investigation and has shown some promise for melanoma and other cancers.

The anticancer drugs either kill cancer cells or modify their growth. However, selectivity of majority of drugs is limited and they are one of the most toxic drugs used in therapy.

side effects of radiotherapy include:
1 . sore, red skin (like sunburn)2 . mouth ulcers
3. sore mouth and throat
4. dry mouth
5 . loss of taste or changes in taste
6 . loss of appetite
7 . tiredness (fatigue)
8 . feeling sick
9 . stiff jaw 10 .bad breath
11 . exposed bone

These side effects usually stop once treatment has finished.

Chemotherapy for Oral Cancer:

Chemotherapy for oral cancer is very useful when combined with the radiation therapy. It must be noted that chemotherapy is not used as a monotherapy alone. However, there are also some side effects of chemotherapy too which may include vomiting, nausea, diarrhea, loss of hair, poor appetite, painful mouth and gums, severe anaemia etc. Cure or prolonged remission Chemotherapy is the primary treatment modality that can achieve cure or prolonged remission in: Acute leukemias Choriocarcinoma

Wilm's tumour Hodgkin's disease Ewing's sarcoma Lymphosarcoma

Retinoblastoma Burkitt's lymphoma Rhabdomyosarcoma Testicular teratomas Seminoma

RADIOTHERAPY AND CHEMOTHERAPY IN THE MANAGEMENT OF ORAL CANCER

Side effects of chemotherapy are common and include:

1 . tiredness (fatigue) 2 .sore mouth
3 .mouth ulcers
4 .feeling and being sick 5 . hair loss
6 . hearing and balance problems 7 . kidney problems

These side effects usually stop once treatment has finished.

Targeted Therapy for Oral Cancer:

Targeted therapy is one more form of treatment for oral cancer. It can be proved effective in both, early stages as well as advanced stages of the oral cancer. Targeted therapy drugs actually bind to specific proteins on cancer cells and interfere with their growth.

Importance of Diet in Oral Cancer Treatment:

Nutrition is highly essential and plays a major part in the oral cancer treatment. Many treatments in the patients make it difficult to eat or swallow and poor appetite, weight loss etc are common. It is essential for you to discuss about your diet with the doctor. A nutritionist can advice you at the best. You can know about the best foods that would be gentle on your mouth and throat and will provide your body with calories, minerals and vitamins which are needed for quick recovery and healthy life.

Prevention Against Oral Cancer:

Below are some of the preventive measures for oral cancer: 1 .Do not smoke or use tobacco products.

2 .Limit the amount of alcohol you take 3 .Eat a well balanced diet

4   .Repeated exposure to sun can cause cancer on lip. So, try and limit your sun exposure whenever possible.
5   .Conduct a self examination, at least once in a month where you examine your lips, gums, roof of the mouth, back gums, floor of the mouth, back of the throat etc. for any signs and symptoms of oral cancer
6   .See your dentist on a regular schedule.

II. CONCLUSION:

It is essential to keep a good oral hygiene and get self mouth checked with a dentist, at least once in 3 years. In case you experience any such symptoms of oral cancer, do visit an expert medical professional and take the best of his or her advices and follow up treatments. Make sure you are keeping your mouth healthy during oral cancer treatments.

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