

ORAL CANCER

(Cancer of the Mouth)

General

Description

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Homogeneous Leukoplakia

The word cancer is of latin origin meaning 'crab'. In the medical literature a cancer is described as a disorderly growth of new cells arising in a tissue. This comparison that cancer is similar to a crab was made because like the claws of a crab burrowing into the earth, cancer cells invade neighbouring tissues.*

In the normal body, cells are well controlled by regulators inherent in each system. A cancer arises when there is lack of control in the growth of cells and cancer cells do not respond to the laws controlling activities of normal cells. As a result these affected cells continue to grow and multiply and produce new cells at the site of a cancer. This newly formed mass of cells do not function as normal tissue. The final outcome usually is a lump or a persistent ulcer (sore area) which results from the breakdown of newly produced cancer cells. These cancer cells may spread to adjoining tissue or travel to and invade remote areas of the body commonly destroying the sites where they go to; therefore the outcome of uncontrolled cancer is fatal. This is more so when the growth is known to be malignant (meaning rapidly spreading and invading other parts of the body). The term cancer includes all forms of malignant growths and ulcers, many varieties being known. Cancer generally manifests in the over 40 age groups.

Incidence of cancer is on the increase. This may be attributed to improved methods of diagnosis. More deaths from cancer are reported each year. It now accounts for a common cause of death in the over 40 age group and

is only second to heart disease which is the major killer.

Oral cancer, one of the mutilating diseases afflicting man, is the most common form of cancer seen in India and Sri Lanka. A study of admission figures to Maharagama Cancer Institute reveals that approximately 30-40 per cent of all cancers of the body occur in the mouth in Sri Lanka (Nissanga, 1976). This figure may be a little exaggerated by the fact that cancers of the other parts of the body are sometimes treated outside Maharagama Cancer Institute. Sri Lanka has the second highest prevalence rate, (Pindborg, 1977), when oral cancer is expressed as a percentage of total body cancer.

As a result, oral cancer should be considered a major health problem in Sri Lanka. Unfortunately people are still not fully aware of the facts and figures of this terrible disease affecting the mankind. Majority of the people are ignorant of the nature of cancer. First we shall discuss how one could become aware of the presence of the disease.

Eighty to Ninety per cent of cancers of the mouth involve the covering surface (the lining) of the mouth. Therefore we shall deal with this type of cancer in this monograph. Majority of these cancers usually arise as a raised patch, growth (lump) or an ulcer (break in the surface). All these changes occur in the soft covering (lining surface called 'the epithelium' which in some respects is similar to your skin. As it involves the surface, if any change occurs it should be visible, except in the most posterior part of the mouth.

In a normal person the surface covering of the mouth is pink in colour and has a smooth contour. This covering surface can be divided into several areas for descriptive purposes such as lips, cheek (buccal), gums, tongue, roof (palate) and floor of the mouth (Figure 1).

Causes of Oral Cancer

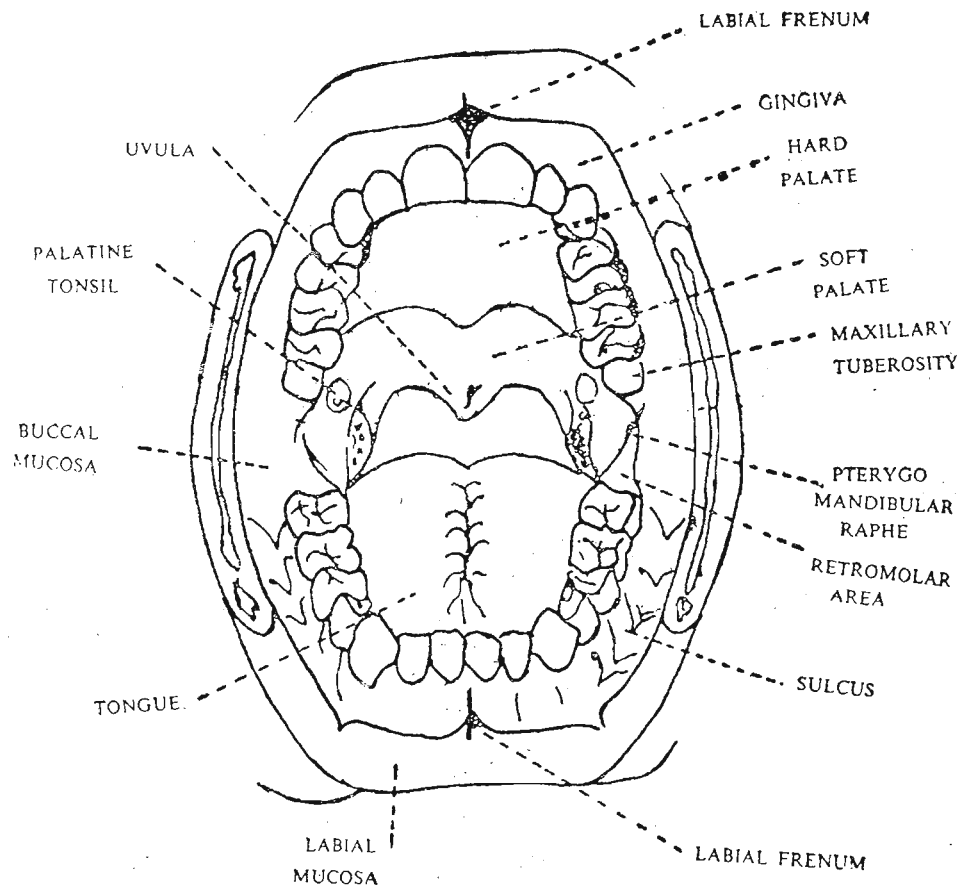
The actual cause for development of cancer is still not known. However, there are many factors which are commonly associated with Cancer and now we shall consider in detail some of these factors as related to oral cancer.

Smoking

Smoking is commonly associated with lung cancer but also appears to have some influence on the development of oral cancer. Although direct evidence from experimental work is lacking, it is commonly found that cancer of the mouth is more common in smokers than in nonsmokers. More convincing evidence comes from the fact that the site of the cancer is usually related to the type of smoking practised. For instance in a beedi smoker oral changes are commonly seen near the commissure (corner) of the mouth, where the beedi is commonly held and in a pipe smoker precancerous areas in the mouth are described in the palate (roof of the mouth - figure 1), where the pipe stems is directed to. In Andhra Pradesh in India where women practice 'Chutta' smoking with the burnt end of the cigar inside the mouth, cancer of the palate is commonly seen.

* Reprinted from "ORAL CANCER (Cancer of the Mouth) - a Monograph for Public Education.

Figure 1: ORAL CAVITY



It is therefore now believed that tobacco smoking in any form either beedi, cigarette, cigar or pipe can result in changes in the covering surface of the mouth, which with continuous usage of tobacco may become a cancer.

Betel/Tobacco Chewing

One of the important factors related to the high prevalence of cancer in Sri Lanka appears to be the habit of chewing betel with other additives such as tobacco. The actual component in the betel quid (whether it is betel, betel nut (arecanut), tobacco

or lime) which causes the change is still not known. The author of this booklet is presently undertaking a research study on the effects of these components of the quid on human oral mucosa.

From the clinical experience it is very clear that those who practice betel chewing are more prone to develop mouth cancer and the site of the cancer is often related to the position in the mouth where the betel quid is kept commonly the lower grooves inside the mouth adjacent to the cheeks opposite the molar teeth. Those who have the

habit of keeping the quid overnight are prone to cause more damage to their tissues.

Studies in India in Kerala District (Mehta *et al.*, 1978) have shown a clear relationship between the betel/tobacco chewing habit and development of precancer in the mouth which may later transform to cancer. In a prospective study in Kerala district these authors reported 11 oral cancers developing over a ten year follow up period among individuals engaged in Betel/Tobacco chewing, while among a control sample consisting

of non-chewers a single cancer was not detected over the same period.

Alcohol

Relationship of alcohol to development of oral cancer is still not clear. Only evidence we have at present, is that in France where spirit drinking is more common than in other parts of the western countries, oral cancer figures tend to be higher. It has been observed that mortality from oral cancer is much lower among the Seventh Day Adventists who abstain from both alcohol and tobacco.

Obviously those who consume crude types of alcoholic drinks are more at risk than those using bottled alcohol.

Irritation

Irritation of tissues specially for a long duration is a factor which has been identified as a cause for development of cancer, although this has not been conclusively proved in human beings. A common source of irritation of soft parts of the mouth in Sri Lanka occurs from broken down teeth which have sharp edges. These cause damage specially during mastication and continued irritation over the years can produce a cancer.

The other factor which is more commonly over stressed is irritation from a bad fitting denture. A properly constructed denture normally does not irritate or damage covering tissue, when poorly constructed, the edges of the denture may cause damage. Another common problem is usage of a denture without proper adjustments over a prolonged period of time. As the tissues in the mouth change with time, when a denture is worn for

over five to ten years, the edges of the denture would dig into tissues thereby causing damage. There are instances when denture wearers try to adjust a poorly fitting denture and as a result end up with rough margins which further traumatise the soft tissue.

It is necessary to stop wearing a non fitting denture which irritates and cuts into the mouth. Professional advice should be sought if a denture continually irritates soft tissues of the mouth.

Sun Light

Continued and prolonged exposure to ultra violet rays from the sun, has been identified as a cause for initiation of lip cancer in white skinned Australian farmers. Fact that lip cancer is much more common in males who tend to work more out doors than females and that the lower lip which is more exposed to sunlight is the common site of cancer rather than the protected upper lip suggests that environmental factors would be playing a role in lip cancer. However, dark skinned people are protected by the presence of pigment and rarely develop lip cancer.

Sepsis

Oral sepsis has been suggested as a cause of mouth cancer even at the beginning of this century (Power, 1918). Even at the present time we are not fully aware of the effect of poor oral hygiene on the development of mouth cancer. Most patients afflicted with oral cancer commonly have sepsis in the mouth. Whether this is the cause for cancer development or is the result of inability to clean the mouth amongst the complications which

set in cannot be clearly established.

Other Causes

Venereal diseases appear to predispose to tongue cancer. Lack of iron in the body, a nutritional disorder commonly found in Sri Lanka (specially among the females who have had multiple pregnancies), has been reported to be of some importance in pharyngeal and oral cancer.

Signs of Oral Cancer

In the very early stages oral cancer is insidious, meaning one may not know or be unaware that he is affected by this disease. This is because pain and bleeding are not common signs of this disease in the early stages. It is the opinion of many that if pain and bleeding were early markers of this disease majority would come up for treatment much earlier. Unfortunately both these symptoms appear quite late in mouth cancer.

Early Signs

In the early stages, oral cancer may have any of the following appearances:

- (a) Raised patch with a surface colour change to white, opaque white or red.
- (b) Loss or peeling of the surface.
- (c) Deep crack/s or fissure/s on the surface.
- (d) Growth protruding out from the surface.
- (e) Break or an ulcer of the surface.

During these early stages apart from the presence of any of the

above changes in the mouth a patient may be unaware of the disease as one does not encounter functional problems.

If one carefully examines the mouth in front of a mirror these changes can be observed and picked up early or another person may find them if you open the mouth wide and allow for a careful examination using a torch. Although these changes are not quite specific for cancer, their presence or detection should arouse the necessity for a professional opinion.

Late Signs

It is only later on as the cancer progresses, (that is the patch or the growth enlarges in size or the ulcer spreads and breaks down), that the more serious complications may occur. These are listed below.

- (a) Pain, discomfort and bleeding
- (b) Burning sensation in the mouth and inability to tolerate spicy food
- (c) Difficulty in swallowing and speech
- (d) Difficulty in opening the mouth
- (e) immobility of the tongue
- (f) Excessive mobility of teeth near the affected area
- (g) Socket following extraction of teeth in the area of cancer does not heal within the normal period of 7-14 days
- (h) Mouth odour
- (i) Denture does not fit anymore
- (j) Numbness of the lip
- (k) Lumps in the neck
- (l) Perforation of cheek
- (m) Weight loss, weakness and inability to eat.

When the signs mentioned above

appear the cancer has usually progressed to a late stage. Now the cancer cells are not limited to the surface covering but are invading deeper tissue like muscle. But nevertheless it is important to seek treatment at least now as a cancer specialist may be able to save the life of a patient even in the late stages, by advanced treatment procedures.

It is necessary to warn the reader that these signs we have mentioned are shared by many diseases and presence of any one or more of them does not always mean that a cancer is present. Only a qualified person would be able to correlate these changes to the disease and confirm presence or absence of cancer.

Commonly Affected Sites of the Mouth

We have learnt that the covering surface of the mouth which is normally pink in colour is the site on which a cancer may start. The different areas of the mouth are illustrated in Figure 1 and any of these areas may be a site for a cancer to develop. However, certain sites have predilection for cancer development, mainly depending on the smoking and chewing habits prevalent in each country. For instance those who smoke clay pipes in Gujarat in India develop cancer of the lips.

The commonest site in which mouth cancer occurs in Sri Lanka is inside the cheek, called 'buccal cancer'. This can be related to the habit of keeping or carrying the betel quid adjacent to the cheek. The area behind the last standing tooth (Wisdom tooth) in the lower jaw called 'retro-molar area' is another common site, where the

quid may stagnate and thereby predispose to cancer.

Although a cancer may start inside the mouth, in late stages it may perforate through the cheek into the face giving rise to an ugly looking ulcer of the skin.

What should be done if Cancer is Suspected?

If you think there is a slightest indication that any of these signs mentioned have appeared in your mouth recently or have been there for sometime you must immediately seek medical advice. As dental surgeons are trained to examine the oral cavity, it is appropriate that you consult the dental surgeon practising in the area where you live, where you live, and complain what you have noticed or felt in the mouth. A delay is unwarranted as it is always dangerous to do so. It is not advisable to go to a quack (who are not professionally qualified, but still

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extract teeth) as they may not possess the fundamental knowledge required to make a diagnosis.

Precancerous Conditions of the Mouth

- (1) A raised white patch which cannot be rubbed off (Leukoplakia).
- (2) Red or White nodules on a raised white patch (nodular leukoplakia)
- (3) A red area with a velvety surface (Erythroplakia)
- (4) Long standing non-healing ulcers.
- (5) Tightness of cheek and tongue (Submucous fibrosis)

Self examination of the mouth or examination by a health worker may reveal the presence of above conditions especially among tobacco betel consuming population. A knowledge of these conditions is warranted.

Initial Steps in Diagnosis of Oral Cancer

If a dental surgeon or a doctor suspects that a patient has a cancer in the mouth a detailed recording of all related factors would be taken down and the mouth would be examined under good illumination. Some may proceed to remove a piece of tissue from the suspected area for a special laboratory examination. This is called a biopsy. Others may refer the patient to a hospital consultant who specialises in the area.

The patient must immediately report to the consultant who will re-examine the patient. If a piece of tissue is required for special tests,

this would be done as early as possible to avoid any delay. Patient may stay in the hospital until the necessary information is available from this special test. If presence of cancer is confirmed, usually the patient or a close relative is informed of the result, and the case would be taken up for treatment at a specialised centre.

What Treatment is available?

Generally oral cancer is treated by radiotherapy, surgery or chemotherapy. Sometimes these methods are combined to get a good result. Radiotherapy means use of irradiation to kill cancer cells. There are many forms by which radiotherapy can be applied. Tele cobalt therapy or use of radium needles are commonly practised in Sri Lanka. Method of application would depend on the type and site of the cancer and the facilities available. Radiation is given in divided doses, and the radiotherapist plans the treatment in such a given in divided doses, and the radiotherapist plans the treatment in such a way that adjoining normal tissues receive minimal damage during treatment.

Teeth in the adjoining areas to the cancer are usually removed before radiation therapy is commenced.

Surgical removal is mainly done either for very small initial lesions of cancer which can be completely removed without mutilation or for late advanced cancers which cannot be controlled by radiotherapy.

There are no special pastes or tablets which can cure cancer.

For treatment of oral cancer most patients have to go the Maharagama Cancer Hospital, as it is there that the specialists are available and radiotherapy units are installed. In the central province, Kandy General Hospital also has facilities for radiotherapy treatment in the Cancer Unit.

Some of the big hospitals in the island are also undertaking treatment of patients for oral cancer.

Can Oral Cancer be Cured ?

Cure for oral cancer mainly depends on the stage and type of the cancer. If reported early majority of the patients survive and could lead normal lives with minimal disability. As the condition becomes more and more advanced the cure rate rapidly falls. In such cases a cancer may reappear soon after a time lapse following completion of treatment. This is called a recurrence of cancer. It may take months or few years after initial treatment, for reappearance of a cancer. Therefore a patient once treated should be carefully observed for further changes which may occur in the treated area and report back to the clinic if something is in suspect.

Survival Rates

Survival rates from oral cancer for Sri Lanka are not available in the medical literature at the present time.

In the United States, in 1973, estimated survival rate of oral and pharyngeal cancer cases obtained by comparing deaths vs registrations was around 50 per cent (American Cancer Society, 1973).

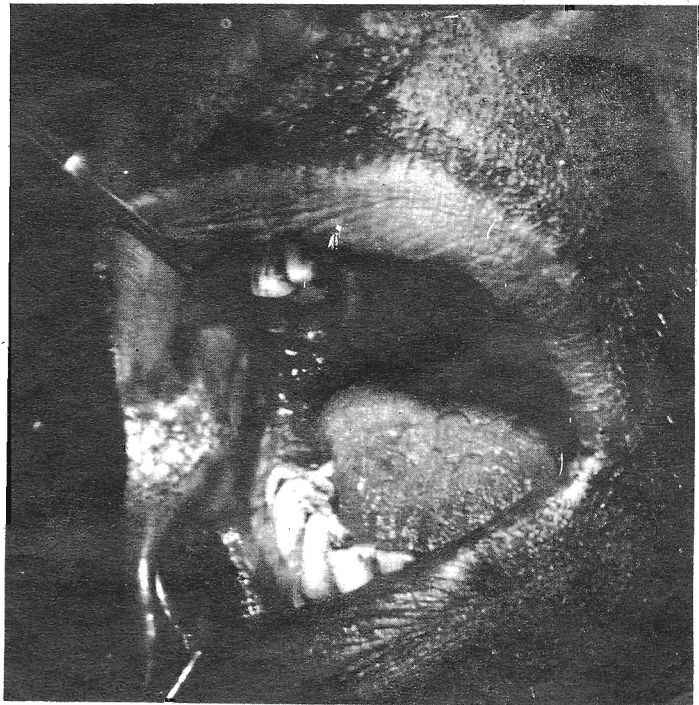
A more reliable guide is obtained by studying survival of new registered cases and following them over a period of about ten years to assess the number of people surviving at each follow-up period. In England and Wales in the early sixties, the five year survival rate for oral cancer was about 50 per cent when the cancer was detected early, and this figure fell rapidly to only 20 percent of patients surviving if the cancer was detected in late stages (Binnie, 1975).

Cancer of the tongue, seems to have a worse prognosis than other sites of the mouth. Females have a better five year survival rate than men for intra oral cancer, suggesting that cancers of the mouth in women are having a better response to treatment.

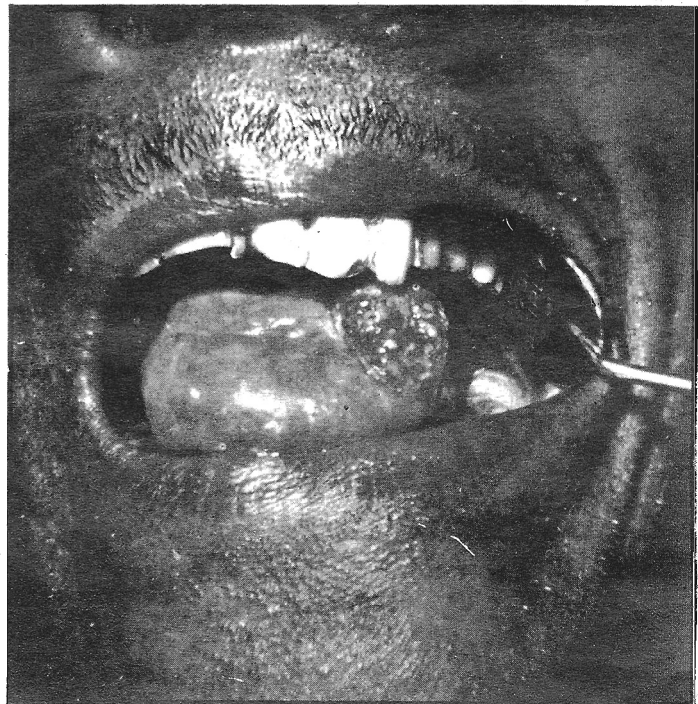
What Happens if a Patient does not Go for Treatment ?

Cancer if untreated, spreads and invades other normal adjoining tissues rapidly. Buccal cancer may spread to the face and erode through the skin. In addition to local invasion, cancer may also spread to the other parts of the body through channels such as lymphatic vessels.

The bad odour which emerges from a late lesion is rather unbearable. If untreated, death is certain as a result of complications which set in due to the presence of a growing cancer.



Speckled or Nodular Leukoplakia



Submucous Fibrosis with Cancer of Tongue