

Cancer of the oral cavity- a growing concern in the Micronesia: a case report from the Marshall Islands.

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Abstract: Cancer of the oral cavity is of growing concern worldwide. In the Micronesia, there has been a recent increase in use of betel nut and tobacco chewing in addition to already existing problem of smoking and alcohol drinking. These deleterious habits have further added the risk for development of oral cancers in the Marshall Islands. The oral cancers have good prognosis, which is directly related to the early diagnosis and treatment. Advanced staged cancers need mutilating surgery in addition to radiotherapy and carry high mortality rate. The epidemiology, etiology and recent approaches in the management of oral cavity cancer has been discussed along with a case report of advanced cancer of the floor of the mouth from the Marshall Islands. (PHD, 2003; 10 (1), Pages 76-78)

Introduction

Cancer of the oral cavity ranks as sixth most common cancer worldwide.¹ In USA the incidence is 10 cases per 100,000 per year and represents 6% of all cancers in men and 3% in women.² The incidence is higher in elderly patients and has marked geographic variation. Table 1 shows death rates from various countries for oral cancers. More than 90% of the malignancy of the oral cavity is squamous cell carcinoma.³ Other malignancies though rare in the oral cavity are from minor salivary glands, the melanomas and sarcomas. Various risk factors for developing cancer of oral cavities include smoking, alcohol, chewing tobacco or betel quid. Also implicated are poor oral hygiene, syphilis, and other pre-existing conditions like leukoplakia, erythroplakia and lichen planus.

Tobacco and alcohol are probably the strongest implicated risk as compared to others, either alone or together. Quoted figures for alcohol and tobacco alone indicate that they individually increase the risk of developing oral cancer about six fold.⁴ The same has been established for recurrence of cancer after successful treatment in smokers and alcohol drinkers. Besides smoking and alcohol, another major risk factor for oral cavity cancer is the chewing of quid and or betel nut.

Oral cavity cancers may present as premalignant conditions such as red area (erythroplakia) or whitish lesions (Leukoplakia) in the mouth. Early stages may also present as fissures or ulcers in the mouth or tongue, which may or may not be painful. There may be restricted mobility of the tongue or even palpable neck nodes, which indicate

Table 1 Age adjusted death rate for oral cancer rates per 100,000

Country	Men	Women
USA	5.8	2.0
Australia	5.3	1.5
England and Wales	3.7	1.7
Hong Kong	21.2	7.1
Japan	2.2	0.8
Norway	4.3	1.1
Singapore	18.9	6.3

From Hammer (1986)

deeper invasion. The diagnosis is confirmed by biopsy from the local site as well as FNAC from the lymph node if present, and their histopathological analysis. Treatment modalities are surgery and radiotherapy alone or combined depending upon the type and stage of cancer. Recently chemotherapy has been incorporated into initial treatment to achieve organ preservation and to improve survival. Oral cavity cancers have very good prognosis and outcome if the disease is diagnosed and treated early. The patient treated within 1 month of onset of symptoms had 5-year survival rates of 86% as compared to the 47% 5 year survival rate for those treated within 7 months. Whereas none of the patients who were seen after 12 months survived.

Illustrative case

A 57-year-old Marshallese male attended dental clinic in Ebeye Hospital on October 2000 with complaint of discomfort, pain and suspected impacted tooth on right molar region. He was a heavy alcohol drinker and also diagnosed case of cirrhosis of liver with hepatosplenomegaly, icterus and deranged liver function tests. No other significant systemic illness was present. Dental examination, x-ray revealed no impaction. No treatment was given at this time but the patient returned few weeks later again with increasing discomfort and sensation of thickening of the tongue. Biopsy from the tongue showed inflammation only with no signs of malignancy. Four months later patient again returned to the hospital with the complaint of limited movement of the tongue, difficulty in mastication and progressive pain.

The case was referred to the ENT specialist in Majuro Hospital on February 2001. History and positive ENT findings showed a thin built elderly male patient with presence of Jaundice, clubbing, anemia and hepatosplenomegaly. There was a single, submental lymph node palpable which was approximately 2 centimeters, non-tender, mobile and firm on palpation.

Oral cavity examination revealed, smooth red and glossy tongue with loss of papillae. The tongue was fixed to the floor of the mouth except for limited mobility over the tip. Floor of the mouth showed ulceration and reddish area and slough. The tongue and the floor of the mouth were hard on palpation indicating involvement of the muscles of the floor of the mouth and the tongue. There was no other significant ENT or systemic findings clinically. He

was provisionally diagnosed as a case of advanced cancer of the floor of the mouth with lymph node metastasis, (T₄ N₁ M₀).

The diagnosis was confirmed by the biopsy from the site, which reported as moderately differentiated squamous cell carcinoma. The standard treatment recommended for these kinds of advance cases of floor of the mouth would be combined surgery and radiotherapy with adjuvant chemotherapy. However with his liver disease and poor general condition in addition to the extent of surgical resection required he was not considered a suitable candidate for surgery. The risk of post-operative mortality was high and he was better off spending the time he has left with friends and family at home. The case was discussed and explained in detail with the patient upon his discharge. He was advised regular follow up but the patient did not return for check-up.

Discussion

Oral cavity cancers are mostly squamous cell carcinoma. Tongue and the floor of the mouth comprise of more than 70% of all oral cancers. The cancer spreads rapidly along lines of tissue planes, invades muscles, through channels in the bones and along the nerves. The oral cancers are notorious for their lymphatic spread. Squamous cell carcinoma of the tongue and the floor of the mouth are associated with the highest incidence of palpable lymph nodes on presentation, which is 40% for each.⁵ The main lymphatic group involved being the ipsilateral deep cervical either directly or through intermediate lymph nodes.

Lesions close to midline may drain bilaterally and more anterior the oral cavity lesion the lower in the neck the lymph may drain. Of more prognostic significance is the presence of occult nodes, i.e. nodes containing squamous cell carcinoma but not clinically detectable. Staging of oral cavity cancer depends upon the size of the lesion, invasion of the adjacent structures like muscles, bone, skin, the lymphatic spread and the distant metastasis. The AJC (1998) as well as UICC (1987) classification are identical and have classified oral cavity cancers in to 4 stages based on the above criteria.

nodes, survival is markedly worse. Advanced stages oral cancer, require additional pre or post-operative radiotherapy for the control of the metastasis. Recent studies and trials have demonstrated that platinum based chemotherapy given concurrently with radiotherapy is effective in local control of cancer, relapse free survival rate and overall survival as compared to radiotherapy alone.³

Association of tobacco and alcohol with cancer of oral cavity and head and neck as a whole has been clear for many years. The modern concept of molecular theory in the progression of head and neck cancer also provide evidence that carcinogens found in these substances have a causal role. Studies and data have shown that the prevalence and spectrum of p53 mutation are significantly greater in cancers in patients who smoke and drink alcohol than those in patients who abstain from these substances.¹⁰

Chewing betel nut and quid was mainly widespread habit among people from Asia. This is probably why they have the highest incidence of oral cancer in the world and death from oral cancer reported in India is as high as 14 to 26 per 100,000. This habit was also seen in Palau and Federated States of Micronesia. Recently this habit has become a growing problem in the Marshall Islands. Local businesses reported increasing demand and soaring business for betel nut and chewing tobacco while the health workers express great concern regarding its deleterious side effects on the users. The quid consists of betel leaf, areca palm nut, slaked lime and catechu in addition to other additives and flavorings, the most common ingredient being tobacco. In addition smoking and alcohol drinking is widely popular in these countries further adding to the risk of developing oral cavity cancer. Study done by Wynder Eral revealed that the risk for oral cancer is roughly the multiple of the risk of each factor individually.¹¹

The case illustrated above is a typical example of an advanced cancer of the floor of the mouth, which could not be treated surgically or by radiotherapy. Besides the oral lesion there was presence of lymph node metastasis. The surgical resections required in these cases are extensive and also require reconstruction. They have high recurrence rates and those especially with stage IV cancers as in the case illustrated above, also carry high mortality rate. Had the patient mentioned above been seen and diagnosed earlier, it would have probably been an operable case with good prognosis. Besides, his liver disease and poor general condition also made him a poor candidate for aggressive treatment.

Conclusion

Oral cavity is a major health problem in the Micronesia due to above-mentioned habits of smoking, alcohol and chewing quid and betel nuts. The incidence can be kept low provided there is awareness among the people and preventive measures taken by all health providers as well as the community. Abstinence from tobacco and alcohol are the best preventive steps. Health education on oral hygiene and hazardous effects of tobacco, alcohol and betel nut or quid should be promoted. It is to our advantage

Table 2 Site distribution of oral cavity squamous cell carcinomas (%)¹⁵

Tongue	45
Floor of mouth	25
Upper and lower alveolus	20
Buccal mucosa	7.5
Hard palate	2.5

Depending upon type of cancer and the staging treatment approach for oral cancers may vary. Early lesions without lymph node involvement can be treated with surgery or radiotherapy alone and carries excellent prognosis with 5-year survival rate of about 80%. Both modalities of treatment are equally effective individually as shown by various dstudies.^{6,7,8,9} Prognosis falls as one passes from stage I to stage IV as shown by different studies. For stage III and IV cancers, with larger tumors and metastatic neck

that the oral cavity is easy to examine for the medical workers, dentists as well as the general population themselves. It is very important to seek medical consultation at the earliest suspicion of the lesion, as already mentioned. Timely intervention can cure the cancer and prevent from more mutilating surgery and also decreases mortality.

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No young man believes he shall ever die
(William Hazlitt in *The Monthly Magazine*, March 1827)