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Oral Cavity Cancers –Early Detection and Outcomes

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Abstract:
Background And Objectives: *Oral cavity cancer is a one of the common form of malignancies in the north-eastern India. This study was to analyze, treatments and outcomes of oral cancers.*
Materials And Methods: *The study was conducted in the department of Otorhinolaryngology and head Neck Surgery, Assam Medical College and Hospital, Dibrugarh, Assam, India between February 2014 to September 2015.*
Results: *Out of 160 newly diagnosed cases, 10 cases were selected for surgery. 30-40 years buccal mucosa and lips 32(20%), 40-50 years buccal mucosa and gums 22(13.75%) , Retro molar trigone , 50-60 years buccal mucosa and oral tongue 76(47%), 60—70 years Hard palate , retromolar trigone andfloor of mouth 22(13.75%) and 70-80 years Gums and cheek mucosa 8(5%). Out of 10 cases, 6 cases for buccal mucosa cancer wide local excision(WLE) reconstruction with pectoralis major myocutaneous(PMMC) flap and Modified radical neck dissection (MRND) type III, 2 cases for lips cancer wide local excision recontruction with deltopectoral flap,1 case cancer lateral border of tongue WLE reconstruction with submental flap with MRND TYPE I and 1 case for floor of mouth carcinoma WLE oral reconstruction with submental flap and selective neck dissection was done. Recurrence of disease was seen one patient.*
Conclusion: *Oral Tobacco smoking, taking alcohol and betel nut are the main prevailing factor .Early detection of the oral cancer can prolongs the survival time of the patients.*
Key words: *oral cancer, wide local excision, pectoralis major myocutaneous (PMMC), submental*

I. Introduction:

The oral cavity is the uppermost part of the digestive tract. It starts at the mucocutaneous junction of the lips (vermillon border) extending posteriorly to the junction of the hard and soft palate superiorly, anterior fauces laterally and the junction of the anterior two-thirds and posterior third of the tongue inferiorly.[1] It includes Lips, Buccal or cheek mucosa, Gums (gingivae), Retromolar trigone, Hard palate, Oral tongue (anterior two-third) and floor of mouth. The oral cavity is lined by stratified squmous epithelium and 90% of the oral cavity tumours are squmous cell carcinomas.

Oral cancer is a major problem in the Indian subcontinent where it ranks among the top three types of cancer in the country.[2]Age adjusted rates of oral cancer in India is high, that is, 20 % 100,000 population and accounts for over 30% of all cancers in the country.[3]

Oral cancer is more aged male but incidence in young people seems to be increasing.
Smoking and alcohol consumption are the major aetiological factors in the development of oral cancer.[4]Oral cancer being considered preventable, if it is detected to the oral mucosa 5 year survival rates 80%, 40% with regional disease and 20% if distant metastasis has occurred at the time of presentation.
Early presentation with oral cancer is associated with an improved prognosis and less extensive treatment in attempt to cure the patient.[5]

TNM staging of oral tumours:[6]
Stage
T stage TX Primary tumour cannot be assessed
T0 No evidence of primary tumour
T1 Tumour 2 cm or less in greatest dimension
T2 Tumour more than 2 cm ,but no more than 4 cm in greatest dimension
T3 Tumour more than 4 cm in greatest dimension
T4a Tumour invades through cortical bone, into deep(extrinsic) muscle of tongue (genioglossus, hyoglossus , palatoglossus or styloglossus), maxillary sinus or skin of face
T4b Tumour involves masticator space, pterygoid plates or skull base and /or encases internal carotid artery.

N stage Nx Regional lymph nodes cannot be assessed
N0 No regional lymph node metastasis
N1 Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension
N2a Metastasis in a single ipsilateral lymph node more than 3 cm ,but not more than 6 cm in greatest dimension
N2b Metastasis in multiple ipsilateral lymph nodes, none more than 6cm in greatest dimension
N2c Metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in dimension
N3 Metastasis in a lymph node more than 6 cm in greatest dimension
M stage Mx Distant metastasis cannot be assessed
M0 No distant metastasis
M1 Distant metastasis

Stage grouping of oral cancer:[6]

Stage	T stage	N stage	M stage
I	T1	N0	M0
II	T2	N0	M0
III	T3	N0	M0
	T1	N1	M0
	T2	N1	M0
	T3	N1	M0
IVA	T4a	N0	M0
	T4a	N1	M0
	T1	N2	M0
	T2	N2	M0
	T3	N2	M0
	T4a	N2	M0
IVB	T4b	Any N	M0
	Any T	N3	M0
IVC	Any T	Any N	M1

Oral cancer may manifest as a erythroplakia, a granular ulcer with raised exophytic margins, an indurated lump/ulcer, a nonhealing extraction socket, a lesion fixed to deeper tissues,cervical lymph node enlargement.Early carcinomas may not be painfull;but later they cause pain and difficulty with speech and swallowing.

For the optimal management multidisciplinary approach is required. In India,it is diagnosed at later stages which result in low treatment outcomes and considerable costs whom cannot afford this type of treatment.[7]rural areas in middle- and low-income countries also have inadequate access to trained providers and limited health services. As a result, delay has also been largely associated with advanced stages of oral cancer.[8]Earlier detection of oral cancer offers the best chance for long term survival and has the potential to improve treatment outcomes and make healthcare affordable.[9]oral cancer affects those from the lower socioeconomic groups, that is, people from the lower socioeconomic strata of society due to a higher exposure to risk factors such as the use of tobacco.[10]even though clinical diagnosis occurs via examination of the oral cavity and tongue which is accessible by current diagnostic tools, the majority of cases present to a healthcare facility at later stages of cancer subtypes, thereby reducing chances of survival due to delays in diagnosis.[11] This study was to analyze, treatments and outcomes of oral cancers.

II. Materials And Methods:

The study was conducted in the department of Otorhinolaryngology and head Neck Surgery, Assam Medical College and Hospital, Dibrugarh, Assam, India between February 2014 to September 2015. All the patients included in this study were detailed clinical history and physical examination. Demographics data was recorded in terms of age, sex, risk factors, stage at presentation and site of involvements. Total 160 cases were detected. Out of 160, 123 cases were male and 37 cases were female. Based on the clinical and radiological characteristics decision taken whether go for surgical management or conservatives. Patients were following up till date.

Data were grouped and analysed by standard statistical method.

III. Results And Observations:

Among 160 cases evaluated, age range was 35 to 72 years with a mean of 42.56 years, in 30-40 years buccal mucosa and lips 32(20%), in 40-50 years Buccal mucosa and gums 22(13.75%) ,50-60 years Retro molar trigone , buccal mucosa and oral tongue 76(47%), 60-70 years Hard palate and retromolar trigone,floor of mouth 22(13.75%) and 70-80 years Gums and cheek mucosa 8(5%) (table 1).134(83.75%) had smoking ,alcohol and betel nut consumption history.127 cases were male and 33 cases were female(fig-1).

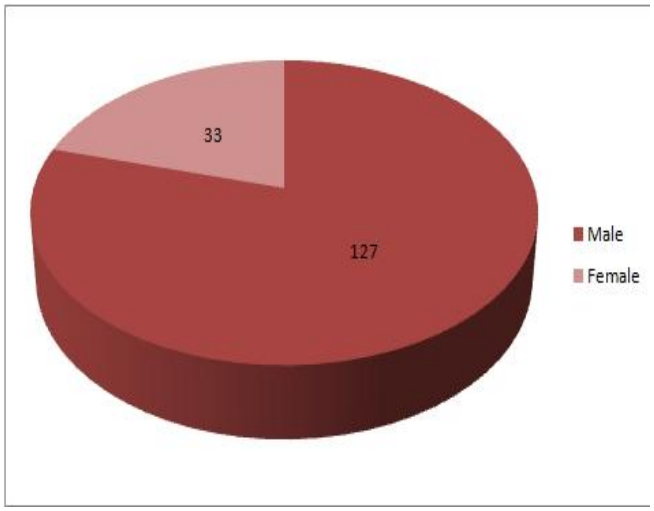

Fig-1 Showing Male and Female ratio

In our series we have categorised the tumours according to site of origin as Lips, Buccal or cheek mucosa, Gums (gingival), Retro molar trigone, Hard palate, Oral tongue (anterior two-third) and floor of mouth . Due to close proximity of the subsites and surrounding sites involvement of multiple sites were seen.

Age in years	Sites of involvement	Number and percentage
1. 30-40	Buccal mucosa and lips	32(20%)
2. 40-50	Buccal mucosa and gums	22(13.75%)
3. 50-60	Retro molar trigone , buccal mucosa and oral tongue	76(47.5%)
4. 60-70	Hard palate and retromolar trigone,floor of mouth	22(13.75%)
5. 70-80	Gums and cheek mucosa	8(5%)
6. 80-90	0	
		Total =160

Table -1 showing age wise involvement

All the patients were squmous cell carcinoma positive in biopsy from the lesion.

120(75%) of patients attended out department were advantages grade III/IV disease. Out of the 160 patients were 10 (6.25%) had surgery as primary treatment, while 150(93.75%) treat with chemo radiation. Among the primary surgery group 8 had surgery as a single modality of treatment while 1 patient received adjuvant radiotherapy in post- operative period. 1 patient had recurrence after the surgery.

Various surgical techniques were employed, based on patient factors and disease extent. 2 cases for squmous cell carcinoma of the buccal mucosa with mandibular involvement treated with wide local excision (WLE ,2cm resection margins) of the buccal mucosa, hemimandibulectomy with plate fixation and defect reconstruction with pectoralis major myocutaneous (PMMC) flap with type III modified radical neck dissection (MRND) were done (Fig-2). 4 cases were WLE of buccal mucosa ,defect reconstruction PMMC flap with MRND type III were done. 1 case with squmous cell carcinoma floor of mouth with N0 neck node treated with WLE of the lesion, defect reconstructed with submental flap and selective neck dissection (Fig-3). 1 case with squmous cell carcinoma right lateral border of the tongue treated with WLE of the lesion defect reconstructed with submental flap and MRND type I. 2 cases of lip cancer treated with WLE and defect reconstructed with deltopectoral flap and MRND type I.

Fig-2 Showing PMMC flap

Fig-3 showing squmous cell carcinoma floor mouth treated with WLE

All the operated cases were average hospital stay fifteen days. Among the operated cases 1 patient had recurrence. 1 patient treated with adjuvant radiotherapy post-operatively.

IV. Discussion:

Cancer is not uncommon in India, where the number of people living with the disease is estimated to be around 2.5 million, with over 0.8 million new cases and 0.55 million deaths occurring each year.[12]The risk of oral cancer associated with smoking is both dose and duration dependent[13] and the excess risk of oral cancer from smoking almost disappears within ten years of giving up.

Alcohol is the second major risk factor with 75% patient's frequently consuming alcohol. Above 30 g of alcohol per day, the risk increases linearly with amounts of alcohol consumed. Those consuming more than thirty drink a week and smoking more than forty a day for twenty years have a 40 times relative risk of developing cancer compared to non-smoker and non-drinker.[14]

In our series 83.75% had positive history smoking ,alcohol and betel nut consumption more than 20 years.

Surgery has come a long way in the treatment of malignancy and still one of the most common methods in managing primary solid tumours today.[15] combined with advances in various reconstruction techniques, the functional and aesthetic outcomes have been greatly improved in cancer patients.

The ultimate aim of surgical resection is adequate clearance of the tumour. In adequate clearance of tumour results in increased local recurrence and decreased long-term prognosis.[16].

Increasing resection margins in the region of the head and neck potentially results in increased functional and cosmetic deficit.

Resection margins of up to 2cm have been advocated, however such margins result in significant functional deficit following the resection of even the smallest of tumours. Three-dimensional, 1 cm resection margins hve been demonstrated as acceptable when dealing with oral and oropharyngeal tumours.[17]

We resects the tumour margin 1-1.5 cm then reconstruction done with various type flap like Pectoralis major myocutaneous flap, Deltopectoral flap and submental flap. Modified radical neck dissection were done for neck node positive and selective neck dissection for the N0 patients. Those who are non-operated are treated with chemoradiation and one patient receiving radiotherapy post-operatively. Increasing resection margins in the region of the head and neck potentially results in increased functional and cosmetic deficit.

Zoanna M Zakrazewska said-radiotherapy can be those who had extracapsular spread within 6 months of surgey.[18]

Po- Wing et al they said that a clear histological resection margin can be achieved at a 95% confidence interval with a 1.5-2 cm surgical margin of resection from the border of the tumour.[19]

Pribas et al in their study showed padicle flap like submental island or facial artery myocutaneous flap is usefull in small defects of the anterior and lateral floor of mouth.[20]

Ariyan first described in 1970, pectoralis major myocutaneous flap .The major advantages of this flap are that it has a large skin territory, it has a rich vascular supply and it can be transferred without prior delay.[21]

V. Conclusion:

The prognosis for large oral cancer is poor. Raising public awareness of oral cancer may help in early detection. Early detection would not only improve the cure rate, but it would also lower the cost and morbidity associated with treatment.

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