CARCINOMA CHEEK: REGIONAL PATTERN AND MANAGEMENT

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Background: Oral cancer varies globally and regionally, and is closely linked with geographical, social, economical, biological, ethnic, dietary and environmental factors. In western countries it accounts for about 2–5% while in the south-east Asia for about 40% of all cancers. In Pakistan it is second commonest tumour after bronchogenic carcinoma in males and breast carcinoma in females. The objectives of this study were to find out the pattern of carcinoma cheek in our region, its etiological associations, management and prognosis. This study was conducted in the Otolaryngology and Head and Neck Surgery Department of Civil Hospital, Karachi from April 1995 to December 1998. It was prospective study. **Methods**: Forty-five cases of primary carcinoma cheek were diagnosed and investigations including OPG and CT scan were carried out along with other required investigations to evaluate the extension of tumour, bony erosion and metastasis. TNM staging was done. All patients were treated surgically, sent for post-operative radiotherapy or chemoradiation and followed up for 3 years. **Result:** Among 45 cases of oral cancer, 28 were females and 17 were males. Common presenting symptom was growth or ulcer. It was more common in 41–50 years of age. Squamous cell carcinoma (SCC) was found in 95.5% of the cases. Most of the patients 31 (68%) were in T4 stage. Surgical excision was done in all cases with reconstructuion in 23 cases and neck dissection in 39 cases. In the follow up for 3 years, 30 patient remained disease free. **Conclusion:** Carcinoma cheek is a common entity in our region and now it is seen in relatively younger patients. Oral cancer is a self preventable disease. What is required is to develop awareness of oral hygiene and discourage the habit of social carcinogens use. Early diagnosis and treatment offers better chance of cure whereas advance disease has a poor prognosis.

Keywords: Oral cavity squamous cell carcinoma (OSCC), supraomohyoid neck dissection.

INTRODUCTION

The incidence of oral cancers varies globally and regionally, and is closely linked with geographical, social, economical, biological, ethnic, dietary and environmental factor. The carcinoma of the oral cavity comprises approx 25–35% of all the head and neck cancers.[1] In western countries it accounts for about 2–5% while in the south-east Asia for about 40% of all cancers.[2] In Pakistan it is second commonest tumour after bronchogenic carcinoma in males and breast carcinoma in females.[3] According to an another study by Bhurgri[4] it is most common cancer in Pakistan, whereas Rehman and Jafferi found that oral carcinoma constitutes about 10% of the malignancies in Paksitan.[5] It is more common in older age groups between 40–50 years of age, preferentially affecting the females.

It is more frequent in persons habituated to pan, betel nut, tobacco, *niswaar*, cigarette/pipe smokers. Jayant *et al*[6] also has demonstrated the association of *bidi* smoking in addition to *pan* chewing with oral cancer. Viruses also have been implicated in the aetiopathogenesis for oral carcinoma. Two Japanese studies have shown the role of Epstein-Barr virus in oral cavity squamous cell carcinoma (OSCC) and other oral cancers.[7,8] Human papilloma virus (HPV) also is said to play a cofactor in OSCC development.[9,10] A study also has stressed that periodontal disease (as indicated by poor condition of the mouth and missing teeth) and daily mouthwash use may be independent causes of cancers of the head, neck, and esophagus.[11]

Buccal mucosa is the most commonest site for the lesion having 50% of all the oral cavity cancers, followed by mobile tongue 20%, and lower alveolus 13%.[12] Hamid *et al* observed that carcinoma of tongue was nearly always preceeded by the carcinoma cheek and buccal mucosa.[13] In another recent local study it was found that buccal mucosa is the most common site followed by mandibular alveolar mucosa and retromolar trigone area.[14]

Histologically squamous cell carcinoma (SCC) is the most common carcinoma comprising about 85–90% with verrucous 5–10% and others like adenocarcinoma, basal cell carcinoma are rarer. Morphologically, SCC can be either exophytic, ulceroinfiltrative or verrucous type. A locally conducted study by Sameer *et al* has showed that the commonest gross macroscopic lesion is of the ulerative type followed by the exophytic fungating mass (Figure-1), and fungo-ulcerative.[15] It is a fast growing, aggressive type of a lesion with a tendency of involving the skin and muscles of the cheek. Reported incidence of a neck node is about 40% for T2 disease and 52% for T3 disease.[16]

Biopsy is the most definitive way to establish the diagnosis. Contrast-enhanced CT (CECT) and/or

MRI of head and neck is also required to know the extent/nature of disease, for staging purpose, bony involvement and vascular/neurological involvement.

Prognostic factors in oral cavity cancers are: tumour site and depth, type of histology, degree of differentiation, presence of perineural spread, level and size of metastatic lymph node and mandibular invasion. The presence of neck nodes in early stage head and neck cancers reduces the survival rate to half and is very important prognostic factor.[17]

Treatment depends upon the age of the patient, TNM staging and the facilities/expertise available. Radiotherapy and surgery are strongly advocated procedures. Surgery is the first line of treatment for the T1/T2 cancers or it can also be excised via electro-cautery device or laser while T3/T4 cancers are best treated initially with surgery with pre or post operated radiotherapy. Carcinoma involving mandible and/or maxilla requires extensive surgery thereby creating mid-face defects hence the need for head and neck reconstruction techniques. Chemotherapy has a very limited role to play in oral cavity carcinoma.

The five-year survival rate for patients with SCC head and neck in the United States and other developed countries is still poor, approximately 40%, and even those patients who do not experience recurrence of the original cancer, have a high risk of developing a second primary malignancy. Thus, a preventive approach before the development of invasive cancer is highly desirable and novel strategies to reduce cancer incidence in SCC head and neck and other tobacco-carcinogen related malignancies are being pursued.[18]

PATIENTS AND METHODS

In this study, 45 cases of carcinoma cheek were admitted in the otolaryngology and Head and Neck Surgery department of Civil Hospital, Karachi from April 1995 to December 1998. All patients were evaluated by history, clinical examination and appropriate investigations. In cases where tumour was abutting or involving the upper and/or lower alveolus OPG was carried out. CT Scan was done in all cases to see the extent of tumour, bony involvement and neck metastases. Ultrasound and bone scan was done in all cases to see for distant metastases. The patients were staged according to TNM staging as proposed by the AJC. Surgery was done in all cases with excision of primary tumour alongwith neck dissection; maxillary and mandibular resection with reconstruction with different flaps was done in select cases. All patients were sent for post operative oncological opinion and radiotherapy was given in all cases. All cases were given a follow-up for at least 3 years.

Patients with carcinoma originating from buccal mucosa were included. Patient with severe cachexia and poor general condition, tumour extending to the cheek from other sites in oral cavity, extensive unresectable tumour, and distant metastases were excluded.

RESULTS

In this study of 45 cases, 28 were females and 17 were males with male to female ratio of 1:1.3. It was more common in 41–50 years age group, and average age was 40 years (Table-1). Significant number of cases were seen below 30 years and the youngest patient was of 27 year of age.

Aetiological factors were identified in 80% of cases whereas 20% denied of any such habits. *Pan* with tobacco was found to be the most common single aetiological factor in 22 patients while *pan* without tobacco was found in 11 of the cases. In addition, some of these patients were habituated to *niswar* and cigarette smoking also.

Ulcerative lesion was found in majority of the patients (27 cases) and fungating growth was found in 18 of the cases. Squamous cell carcinoma was found in 43 cases (95.5%) and Basal cell carcinoma in only 2 cases (4.4%). The most common squamous cell carcinoma variant found was of well differentiated type followed by the moderately and poorly differentiated types respectively.

At presentation 31 cases were in T4 among whom 12 were having a nodal stage of N1N2. Another 7 patients (15.5%) were in T3 stage and 2 of them were having N1 lymph node while 31 were having N0 lymph node (Table-2).

Bony erosion was more common in mandible that is in 24 cases (53.3%) while maxilla was involved only in 7 cases (15.5%). In 2 patients both were found to be involved (Table-3).

Primary surgical excision was done in all the cases along with various kinds of mandibulectomies and maxillectomies in patients with their involvement. Radical neck dissection was done in 10 patients and supraomohyoid neck dissection was done in 29 patients (Table-4).

Reconstruction of defects was done with different flaps (Table-5). Pectoralis major MyoCutaneous Flap (PMMCF) was used in 11 patients (Figure-2) while split skin grafting (SSG) in 10 patients with primary closure achieved in 26 of patients. Postoperative radiotherapy was given to all the patients and they were kept in constant follow up. At the end of 3 years, 30 patients remained disease free, 6 developed a recurrence, 5 died after eight months postoperatively and 4 were lost in the follow up.

Table-1: Age distribution with the average age of presentation

Age group	Patients	%
>30 Years	10	22.2
31–40 Years	9	20
41–50 Years	19	42.2
>50 Years	7	15.5
TOTAL	45	100
AVERAGE AGE: 40 YEARS		

Table-2: TNM-staging of the cases

State	Patients	%
T1	2	04.4
T2	5	11.1
T3	7	15.5
T4	31	68.8
N0	31	68.8
N1	7	15.5
N2	7	15.5
N3	–	–
7 Patients were in T4 N2 M0, 5 Patients were in T4 N1 M0 2 Patients were in T3 N1 M0		

Table-3: Involvement of Mandible/Maxillae.

BONE INVASION	Patient.	%
OF MANDIBLE	24	53.3
OF MAXILLA	7	15.5
BOTH	2	4.4

Table-4: Surgical interventions done.

PROCEDURES	No.	%
Excision	45	100
Marginal Mandibulectomy	17	37.7
Segmental Mandibulectomy	5	11.1
Hemi Mandibulectomy	4	08.8
Partial Maxillectomy	7	15.5
Total Maxillectomy	2	4.4

Table-5: Reconstruction options used

TYPES OF FLAPS	No.	%
PMMC	11	24.4
DP	3	06.6
Fore Head Flap	3	06.6
NasoLabial	2	4.4
Lingual Flap	2	4.4
Split Skin Graft	10	22.2
K-Wire	4	08.8

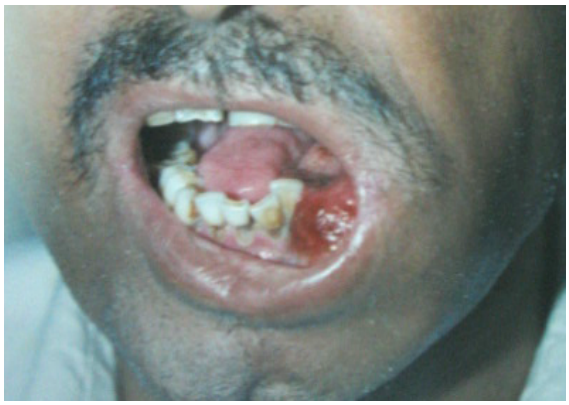

Figure-1: A patient showing a exophytic lesion in the oral cavity.

Figure-2: Post-operative image of a OSCC patient reconstructed with a flap

DISCUSSION

The carcinoma cheek is the most common form of oral cavity cancer in our part of the world as was evident in the study by Zaidi SH[12] and also according to the report of Parkin *et al*[19], cancer of mouth and pharynx is the second most common cancer in the developing world. This same is reflected in our study that in a very short time period from 1995–98, 45 cases of carcinoma cheek presented in the outpatient department at our hospital. A local study done to evaluate *niswar* as the etiologic factor for oral cavity cancer found that out of 100 patients, 80% of the patients had a positive history of snuff (*niswar*) dipping, while 20% had not.[20] The most common etiological factor was the habit of *pan* and betel (*areca*) nut chewing, made more lethal because of the patients' poor socioeconomic status and subsequent malnourishment. Recently a local demographic study also has identified betel (*areca*) nut chewing as a potential risk factor for the oral cavity cancer.[21] This is in contrast with the international studies which have shown that the risk factors for the development of OSCC is predominately the alcohol and smoking.[22,23] This may be due to the fact that the type of social carcinogens used in our part are at present not in vogue in the western parts.

In our study, females had higher incidence compared to international data where male dominated.[24,25] This could be explained by the fact that the habit of pan and betel nut chewing is more common in the females.

Although carcinoma cheek is a disease of middle age but our study shows that a significant number of cases are of a younger age group i.e. well below 30 years. Most of them were in a habit of using carcinogenic substances (*pan*, betel nut, *gutka*,

smoking) since their childhood and majority of them belonged to under-privileged group of the society.

Due to sensitive nature of the oral cavity and that lesions of oral cavity interferes with speech and swallowing and because the examination both by the patient and physician is easy, one would expect early diagnosis of oral conditions but unfortunately this is far from the case and OSCC are notorious for their late presentation[26], as also is evident in our study in which 7 patients (15.56%) were in T3 and 31 patients (68.8%) in T4 showing negligence and lack of awareness.

In our group incidence of mandible invasion was high that is 24 patients had it whereas a clinically palpable lymph node was present in 14 cases. The nodal metastases rate was a bit lower as compared to international data showing 40%.[27]

There is a controversy in the elective treatment of neck in cases of oral cavity carcinoma, i.e., whether to do radical neck dissection or selective neck dissection or a modified neck dissection. As the world is getting more and more conservative, supraomohyoid neck dissection with removal of level I, II and III lymph nodes[28] is advocated by many surgeons, whereas Ahmed *et al*[29] advocates removal of level IV lymph nodes as well, as they found its involvement in their study of oral cancers. These conservative procedures as compared to radical neck dissection have proved to be of same oncological effectiveness[30,31], same practice was observed in this study and suprahyoid neck dissection was done in cases with N0 neck and radical neck dissection in N1 and N2 neck disease. Majoufre *et al*[32] and Shah and Anderson[33] found this quite satisfactory with regard to the clearance of metastatic nodes, in context of 5 years survival and recurrence.

Pectoralis major myocutaneous flap was most commonly used in this study for reconstruction, as it is a workhorse of head and neck reconstructive surgery.[34] Complication rate was higher as compared to international data.[35,36] Forehead flap used, though covered the defect well, but gave a bed cosmetic scar as it is known for.

Prognosis was good in stage I and II patients, while stage IV patients have poor prognosis, as the literature reveals[37,38]

CONCLUSION

Carcinoma cheek is a common entity in our region and in females because of the more prevalent use of *pan* chewing, *niswar* use and betel nut chewing habits which are made worse in the background of poor socioeconomic status, poor oral and dental hygiene and lack of awareness. Several investigators also have reported an increase in oral cancers diagnosed in younger patients further sensitizing clinicians to the need to screen all patients for oral cancer.

Oral cancer is a self preventable disease. What is required is to develop awareness of oral hygiene among the population and discouraging the habits of using social carcinogens via the media and publicly held community based awareness programs. They should also be educated for self examination of oral cavity on a regular basis and to promptly consult a specialist if any suspicious looking area is noted in the oral cavity.

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