



ORIGINAL RESEARCH PAPER

ENT

SURGICAL MANAGEMENT OF ORAL CANCER WITH PRIMARY RECONSTRUCTION

KEY WORDS: Oral cancer, flap reconstruction, PMMC flap

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ABSTRACT

Introduction: Primary tumours of oral cavity may be derived from the mucosa, salivary glands, bone or dental tissues. Over 90% of tumours of the oral cavity are squamous cell carcinomas.^{1,9} Reconstructive surgery following resection for oral cancer is considered when there is functional or aesthetic loss of structures in the oral cavity. Although primary closure can be achieved within oral cavity, the larger the defect, the more is the functional compromise. The majority of soft tissue repair within the oral cavity require three – dimensional reconstruction with soft pliable skin often without significant bulk. **Aims :** To study the proportion of oral cancer with surgical management with primary flap reconstruction. To analyse the different surgical modalities of treatment and its outcome. **Materials And Methods:** This study was carried out in a tertiary care hospital in Central India, from March 2020 to August 2021. Out of 136 patients diagnosed with oral cancer, 61 (44.85%) were found to be operable. 75 (55.15%) patients were inoperable, unfit or not willing for surgery. They were assessed, evaluated and managed accordingly. **Results:** Oral cancer was most commonly noted in fourth decade. The most involved site was alveobuccal complex. Flap reconstruction was required in 62.3% (38 out of 61) of the patients. Out of 38 patients, Pectoralis major musculocutaneous flap only was the most common flap reconstruction accounting for 19 out of 38 patients and in combination with Deltpectoral flap in 3 patients. **Conclusion:** Though free flap reconstruction has emerged as a good option in primary reconstruction with increased functional repair, strict post operative monitoring was needed as complications were more frequently encountered in those cases.

INTRODUCTION

The oral cavity is the uppermost part of the digestive tract. It is lined by stratified squamous epithelium. Primary tumours of oral cavity may be derived from the mucosa, salivary glands, bone or dental tissues. Over 90 per cent of tumours of the oral cavity are squamous cell carcinomas.^{1,9} Globally over 300 000 people are diagnosed with oral cancer each year and it is the eighth most common malignancy.² There is considerable geographic variation, oral cancer being the third most common cancer in South East Asia.³

The cancer epidemic in developed countries and increasingly in developing countries, is due to the increasing levels of prevalence of risk factors. The development of oral cancer in many cases appears to be due to chronic exposure to topical carcinogens, mainly tobacco and alcohol.

However, there is a distinct geographical variation among the risk factors contributing to oral cancer.⁵ In the Western population exposure to sunlight (lip cancer), cigarette – smoking and alcohol consumption are the frontline etiological factors compared with the use of smokeless tobacco and combustible tobacco more prevalent in the South East Asian countries.⁵ Patients present at advanced stage of oral cancer. As a result, the mortality rate from oral cancers remains high in spite of new treatment modalities.

Oral cancer is more common in males, usually presenting in their sixth and seventh decade of life, although the incidence of oral cancer in young people seems to be increasing.⁴

Oral cancer is considered largely preventable. If oral cancer is detected when it is confined to the oral mucosa five-year survival rates exceed 80%, decreasing to 40% for those with regional disease at presentation and 20% if distant metastasis has occurred.⁸

The management of patients with oral cancer requires a concentration of medical expertise and resources. For the patient to receive optimal management, a truly multidisciplinary approach is required.^{7,8}

The aim of this study was to determine the proportion of oral cancer with surgical management and primary flap reconstruction. Also, to study the different surgical modalities of treatment in oral cancer and its outcome.

MATERIALS AND METHODOLOGY

This cross sectional study was carried out in ENT OPD of tertiary care hospital in Central India, from June 2018 to December 2020. Out of 136 patients diagnosed with oral cancer, 61 (44.85%) were operable. 75 (55.15%) patients who were inoperable, unfit or not willing for surgery were given radiotherapy and chemotherapy.

Inclusion Criteria

- Early stages of oral cancers which are operable.
- Oral cancers which need management with primary reconstruction.

Exclusion Criteria

- Stage IVC oral cancers.
- Locally aggressive oral cancers including cancers engulfing the carotid sheath and extending to vertebral column.
- Distant metastasis

A complete and detailed history was taken... The oral lesion and neck node was assessed by local examination, digital palpation of the lesion and surrounding region to assess the extent of disease and involvement of skin and bone. Tissue biopsy and FNAC from lymph node was done for histopathological confirmation of the disease. CT oral cavity and neck was done to assess the extent of disease, involvement of bone and lymph node metastasis. Radiological investigations were done to rule out metastasis. X-ray chest or HRCT thorax was done to rule out lung metastasis. Ultrasound abdomen was done to rule out liver metastasis. X-ray spine and long bones were done to rule out bone metastasis.

After complete evaluation of the disease and its staging according to AJCC classification, treatment was planned.

Excision of primary with neck dissection was done along with reconstructive surgery if required. Post operative patients were monitored for any complications. Post operative radiotherapy with or without chemotherapy was given depending on the post op histopathological report. Advanced cases who were inoperable were given radiotherapy in combination with chemotherapy. Regular follow-up was taken.

RESULTS AND DISCUSSION

Table 1. Age Wise Distribution

AGE GROUP	# CASES	CURRENT STUDY
< 20	00	00
20 – 29	01	1.64
30 – 39	18	29.51
40 – 49	20	32.79
50 – 59	11	18.03
60 – 69	09	14.75
70 – 79	02	03.28
> 80	00	00
Total	61	100

Table 2. Site Wise Distribution

Site of tumour	# Cases	Percentage
Lip	04	06.5
Alveolus	26	42.62
Buccal mucosa	20	32.79
Anterior 2/3 rd of tongue	11	18.03
Floor of mouth	00	00
Total	61	100

Table 3. Local Invasion Of Tumour

Tumour invasion	# Cases	Percentage
T1	02	03.28%
T2	17	27.87%
T3	13	21.31%
T4a	28	45.90%
T4b	01	01.64%
Total	61	100

Table 4 - Surgical Modality

Surgical modality	#Cases	Percentage
Primary closure	23	37.70
PMMC	19	31.15
DP	05	8.20
PMMC+DP	03	4.92
Radial Free Forearm Flap	01	1.64
ALT	04	6.56
Free fibular	06	9.84
Total	61	100

Table 5. Post Op Complications And Management

POST OP COMPLICATIONS	#CASES (n = 38)	% (n = 38)	TREATMENT	POST TREATMENT OUTCOME
Total flap loss	02	05.2	Revision surgery	Flap acceptance – good
Wound infection	14	10.52	IV antibiotics	Good wound healing
Fistula	03	05.2	Radiotherapy	Healed
Hematoma	09	23.6	Re-exploration	1 – died Other flap acceptance – good
Partial necrosis	03	07.89	Debridement	Good wound healing

In this study the youngest patient was 28 years of age while the eldest was 71 years of age. As depicted in Table 1, the mean age of patients was 50 years with 32.7 % belonging to the fourth decade of life. Patients under the age of 40 years were 19 (32.79%).

As shown in Table 2, the most common site of oral malignancy in this study was alveobuccal complex seen in 42.62 % of the cases, followed by buccal mucosa seen in 32.79% and anterior 2/3rd of tongue in 18.03% cases. Carcinoma lip was the least accounting for 6.5 % of the total 61 cases studied.

In this study, out of 61, 2 patients (3.28 %) presented in T1, 17 patients (27.87 %) in T2, 13 patients (21.31 %) in T3, 28 patients (45.9 %) in T4a stage and 1 patient (1.64 %) in T4b stage, as given in Table 3.

Table 4 depicts the mode of treatment given. 50.8% patients were treated with surgery only. 49.18% patients were treated with radiotherapy and/or chemotherapy post operatively. Neoadjuvant chemotherapy was given in 3.28% of patients to reduce the size of tumour. Out of 61 operated patients, primary closure was done in 23 (37.70 %) patients, primary flap reconstruction was done in 36 (59.02 %) patients and secondary reconstruction was done in 2 (3.28 %) patients.

Table 5 shows the post operative complications and its management. In this study, total loss of flap was noted in 2 out of 38 patients. Revision surgery was done in these patients following flap necrosis. Total flap loss was observed in free flap than locoregional flap reconstruction.

Systemic complications in the form of like fever, hypertension, hypotension, septicaemia and pneumonia were noticed in 83.61% patients in the immediate post operative period. Systemic complications were observed mainly in patients with co morbidities and old age. Minor complication like fever and post operative raised BP and sugar were noted in majority of patients while major complications like septicaemia and pneumonia were least noted ddedaccounting to around 8.55% patients.

Bleeding or haematoma was noted in 9 patients, out of which 4 patients who underwent free flap reconstruction required re-exploration. Partial loss of flap was noted in only 3.28 % of the cases.

Functional outcome was better with free flap reconstruction than locoregional flap reconstruction. Fistula formation was noted in 5.2% of the patients.

CONCLUSION

In this study, oral cancer was most commonly noted in fourth decade. Increased incidence was noted among the younger age group with male preponderance. Majority of the patients presented with oral lesion at an advanced stage of cancer. Squamous cell carcinoma was the most prevalent histopathological type of oral cancer affecting the alveobuccal complex. Surgery was employed as the standard mode of treatment to achieve cancer control. Majority of patients presented with a locally advanced tumour leading to extensive resection of mucosa, muscle, bone, and skin. Reconstruction of these defects was done to ensure adequate function and cosmesis. Locoregional flap was the most commonly done flap reconstruction. Pectoralis major musculocutaneous flap was done in majority of patients. Though free flap reconstruction has emerged as a good option in primary reconstruction with increased functional repair, strict post operative monitoring was needed as complications were more frequently encountered in those cases. Mortality rate was more with free flap reconstruction than locoregional flap reconstruction.

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