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Study of Management of oral Cancer

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Abstract: *Longterm outcomes associated with oral cancer and its management over the past several decades has caused concern. An attempt to study the outcome of treatment modalities of oral malignancies by a prospective and retrospective study was done in the Department of Surgery, Coimbatore Medical College Hospital. In this study the protocol and efficiency of multimodality management of oral cancer was done. All 325 cases of oral malignancies admitted to Coimbatore Medical College Hospital from July 2012 to August 2014 was included. After preliminary investigations and staging, treatment modalities and response was studied. Multimodal treatment had a better cure rate compared to single modality treatment. 16 patients were treated with surgery, CT and RT and there was only one recurrence within one year, Combination CT was more effective than single agents. Radiotherapy was more effective than surgery in the early stages and in combination with other modalities in late stages.*

Keywords: *Oral malignancy, surgery, radiotherapy, chemotherapy*

I. Introduction

Oral Malignancy is the sixth most common malignancy in India and constitutes a significant part of our regular surgical work. Although there is significant improvement in chemotherapy, radiotherapy and surgical technique, the disease is challenging as most patients present with advanced stage. An attempt to study the outcome of treatment modalities of oral malignancies in the department of Surgery, Coimbatore Medical College Hospital was done.

II. Materials and Methods

This study was a retrospective study conducted in department of Surgery, Coimbatore Medical College Hospital. Subjects were 325 patients with oral malignancy admitted in the surgical units and registered and treated by Department of Oncology. Under this study all malignant neoplasms of lip,cheek,alveolus,tongue,floor of mouth and hard palate were included[1]. A careful recording of history,etiological factors,clinical examination of primary, confirmation by wedge biopsy and HPE and metastasis workup was done and staged in TNM staging[2].

III. Results

Table:1

Type	Number	%	Surgery	%
Squamous cell carcinoma	309	95	25	8
Verrucous carcinoma	15	4.6	5	33.3
Melanoma	1	-	-	-
Total	325	-	30	-

Surgery is the most effective modality of treatment for verrucous carcinoma. However as most of the squamous cell carcinoma patients report with advanced disease or opted for nonoperative management, only 8% of patients with squamous cell carcinoma underwent surgery.

Five patients underwent surgery for verrucous carcinoma. Four were not subjected to any adjuvant modalities. One patient who had recurrence was subjected to chemotherapy.

Table :2 Surgery- Verrucuous carcinoma

Surgery	Site	Number	Recurrences
Excision with primary closure	R – Buccal	1	-
Wide excision, segmental mandibulectomy, Deltopectoralflap	L – Buccal	1	-
Wide excision, Tongue flap cover	L – Buccal	1	1
Wide excision, Abbe's flap	Lip	1	-
Wide excision, segmental mandibulectomy supra omohyoid dissection, Deltopectoralflap	L – Buccal	1	-

25 patients with squamous cell carcinoma were operated and the results discussed below. Only a few patients were operated upon because many patients opted for noninvasive therapies for fear of disfigurement and prolonged hospitalization or reported late making surgery difficult.

Table :3 Surgery – Squamous cell carcinoma

Buccal Mucosa	**Number**	**Recurrences**
Excision with primary closure	3	-
Wide excision with SSG	3	1
Wide excision, Hemimandibulectomy, Deltopectoralflap)	2	-
Wide excision, Hemimandibulectomy, forehead flap	1	-
Tongue	**Number**	**Recurrences**
Excision with primary closure	4	1
Hemiglossectomy, Tongue Flap	4	-
Hemiglossectomy, RND	2	-
Hemiglossectomy, MRND	1	-
Alveolus	**Number**	**Recurrences**
Wide excision, Subtotal Maxillectomy	1	-
Hemimandibulectomy, Deltopectoral flap	1	-
Hard palate	**Number**	**Recurrences**
Excision	1	-
Lip	**Number**	**Recurrences**
Wide excision, Modified Flap	1	-
Floor of Mouth	**Number**	**Recurrences**
Wide excision, Segmental Mandibulectomy, Nasolabial flap	1	-

The recurrences were subjected to chemotherapy and radiotherapy.

Table:4 Post surgery treatment

Surgery	**Post surgery CT**		**Post surgery RT**		**Post surgery CT + RT**	
	No	%	No	%	No	%
30	9	30	1	3	14	47

Majority of the patients were subjected to chemotherapy and locoregional radiotherapy for efficient control. Chemotherapy was administered as either primary CT, adjuvant CT or salvage CT.

Table:5 Primary CT

Regimen	**Primary CT**		**Failure**	
	No	**%**	**No**	**%**
Inj. Cisplatin D1, D2 Inj. 5FU D1 – D3	55	45	10	18
Inj.cisplatin D1, D2	19	15.5	10	53
Inj. MitomycinC D1 Inj. 5FU D1 – D3	10	8		
Inj. Vincristin D1 Inj. Cyclophosphamide D1	29	24	2	7
Inj. Mitomycin C D1 Inj. Cyclophosphamide D1	3	2.5	-	-
Inj. Methotrexate D1 Inj. Cyclophosphamide D1	6	5	-	-

Table:6 Adjuvant CT

Regimen	**Adjuvant CT**		**Failure**	
	No	**%**	**No**	**%**
Inj. Cisplatin D1, D2 Inj. 5FU D1 – D3	54	54	6	11
Inj.cisplatin D1, D2	20	20	4	20
Inj. MitomycinC D1 Inj. 5FU D1 – D3	-	-	-	-
Inj. Vincristin D1 Inj. Cyclophosphamide D1	20	20	2	20
Inj. Mitomycin C D1	-	-	-	-

Inj. Cyclophosphamide D1				
Inj. Methotrexate D1 Inj. Cyclophosphamide D1	6	6	1	-

Radiotherapy was also administered either as primary or palliative treatment. The patients were subjected to Telecobalt external beam radiotherapy at 200-220cGy, 5 daily fractions per week, 28-35 sittings

Table :7 Primary RT

Site	Primary RT	Complete Response	% of failure
Buccal Mucosa	38	20	47
Tongue	12	5	58
Alveolus	8	5	37
Floor of mouth	8	6	25
Hard palate	-	-	-
Lips	-	-	-

Table:8 Palliative RT

Site	Palliative RT	Complete Response	% of failure
Buccal Mucosa	20	14	30
Tongue	12	4	67
Alveolus	-	-	-
Floor of mouth	-	-	-
Hard palate	-	-	-
Lips	-	-	-

Multimodal treatment strategy was more beneficial than single modality and a majority of patients received multimodal strategies.

Table:9

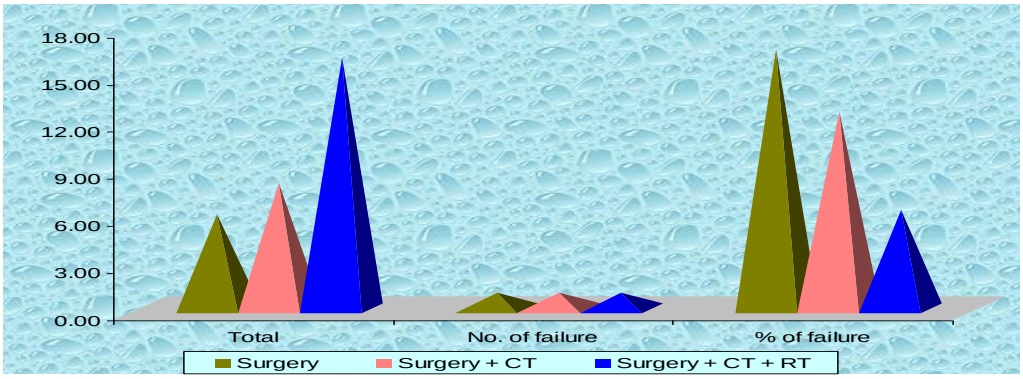
Regimen	No	Positive response		Failure		Default	
		No	%	No	%	No	%
Surgery + CT + RT	16	14	81.5	1	6.25	1	6.25
CT + Surgery	8	6	75	1	12.5	1	12.5
CT + RT	152	98	65	49	32	5	3
Surgery	6	4	66.5	1	16.5	1	16.5

The response was better because the three modalities act synergistically in controlling both the local and regional metastasis.

1) Number of patients with oral malignancy studied: 325
2) Number of patients taken up for surgery: 30
3) Number of patients who had primary radiotherapy: 66
4) Number of patients who had palliative radiotherapy: 32
5) Number of patients who had primary chemotherapy: 122
6) Number of patients who had multimodal treatment:176
7) Number of patients who had recurrence: 6
8) Number of patients who had default treatment: 122

IV. Discussion

Most of the patients presented late and hence the results of surgery could not be compared effectively.



Radiotherapy was used as the first line of management of carcinoma of buccal mucosa in a series by M.Krishnan Nair and R. Sankaranarayanan[3]which showed 85% with Stage I, 63% with Stage II, 41% with Stage III and 15% with Stage IV disease survived disease free at 3 years. In our study, Radiotherapy was used in 38 cases of buccal mucosa Ca, 12 cases of tongue Ca, 8 cases of Alveolus Ca, 8 cases of floor of mouth Ca followed by chemotherapy with 47% failure for buccal mucosa Ca, 58% failure for tongue Ca, 37% failure for Alveolus and 25% failure for floor of mouth Ca. Surgical treatment for $T_1 - T_2$ patients with the addition of postoperative twice a day radiotherapy is recommended in selected cases. For $T_3 - T_4$ patients twice a day preoperative radiotherapy is recommended as it reduces the extent of the surgical procedure (Fein et al., 2002)[4]. Single modality treatment with surgery or radiotherapy is generally recommended for the patients who present with early stage disease Stage I and II[5].

The 2 modalities result in similar survival in these individuals. In contrast, in patients with locally advanced disease at diagnosis, combined modality therapy[6] is recommended. Unfortunately the majority of oral cancers present at an advanced Stage III and IV, when therapy is more complex and the prognosis is worse. A combination of surgery and radiation therapy provides the best survival rate although this increases the complication and morbidity[7]. Role of chemotherapy has not been clearly defined in oral squamous cell carcinoma.

V. Conclusion

Multimodal treatment had a better cure rate compared to single modality treatment. Radiotherapy is more effective in the early stages and in combination with other modalities in late stages.

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