



## SELECTIVE LYMPH NODE DISSECTION VS. RADICAL LYMPH NODE DISSECTION IN CASE OF ORAL CAVITY MALIGNANCIES

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### ABSTRACT

**Aim-** Comparison between selective lymph node dissection and radical lymph node dissection on the overall prognosis of the oral cavity malignancies. **Material & methods-** The material for the present study considered of 52 cases of carcinoma of oral cavity registered with the index medical college, hospital and research centre, Indore, between January 2015 to July 2016. **Results** – for N0 & N1 nodes selective lymph node dissection & radical lymph node dissection are equally effective., for N2b and higher nodes radical node dissection is better. **Conclusion-** the management of the cervical nodes should be highly individualized and cafeteria approach Selective neck dissection, when used in combination with postoperative radiotherapy, is an efficacious way to manage metastatic squamous cell carcinoma to the neck.

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### INTRODUCTION

Cancer, though as old as the history of medicine, still remains the worldwide problem and as an enigma for the modern medical science. The single most important factor affecting prognosis for patients with carcinoma of the oral cavity is the stage of the disease at the time of initial diagnosis and treatment. Patients who present with tumours localized at the primary site without dissemination to regional lymph nodes enjoy an excellent prognosis. On the other hand, once dissemination to regional lymph nodes takes place, the probability of 5-year survival, regardless of the treatment rendered, reduces to one-half of that seen in early staged patients. Clearly, therefore, the single most important prognostic factor in the treatment of patients with oral malignancies is the status of cervical lymph nodes. In spite of the progress made in the field of early diagnosis by public education and physician awareness in the past few years, a significant number of patients still present with disease at an advanced stage at the time of diagnosis. Reports from the American Cancer Society indicate that over 40% of the patients with oral malignancies present with regional dissemination of disease at the time of the presentation. This figure is much higher in India. Thus, management of cervical lymph nodes become a vitally important component of the overall treatment strategy for patients with cancers of head and neck.

### MATERIAL AND METHODS

The material for the present study considered of 52 cases of carcinoma of oral cavity registered with the index medical college, hospital and research centre, Indore, between January 2015 to July 2016. All the patients had undergone surgical treatment for their primary lesion with cervical lymph node dissection, either radical neck dissection or selective neck dissection with or without radiotherapy. After completion of the treatment, all were followed up and the results were studied. A thorough history of the complaints was taken at the onset. A history of any significant past illness was recorded. Particular attention was given to the personal history, with history of tobacco intake, smoking or alcohol addiction recorded. Thorough examination of all the patients was done including general examination and local examination of the oral cavity and the neck nodes. Any ulcer or swelling was examined thoroughly including the size of the lesions, their exact location, edges etc. The cervical lymph nodes were examined thoroughly bilaterally. Any palpable lymph node was noted. Thorough search was done to detect any metastasis, by clinical examination and relevant investigations. Patient's was categorized as per the TNM classification and treatment was given, as deemed appropriate. After the completion of treatment, including any radiotherapy (if given), the patients were followed up. At each visit, the complaints were recorded and local examination was done to look for any loco regional recurrence. Detailed clinical examination was done to detect

any metastasis. At the end of it, the patients were grouped according to the clinical staging, their lymph node status, the treatment they received for their cervical nodes and whether they received radiotherapy or not. The results were recorded and studied in various groups.

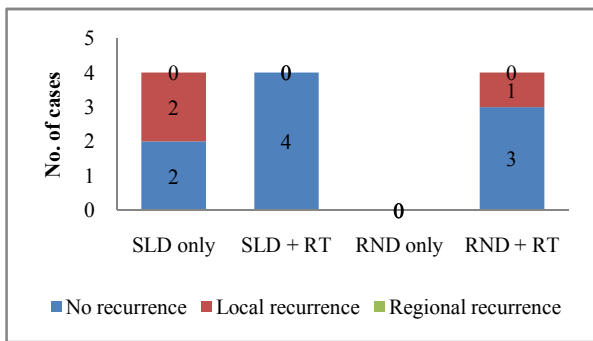
**Observation**

A total number of 52 patients are studied according to the nodal status. The following is the observations –  
SLD – selective lymph node dissection RND – radical lymph node dissection RT- radiotherapy

**Table 1** Recurrence rates according to the nodal status (N)

**a)N0 lesions**

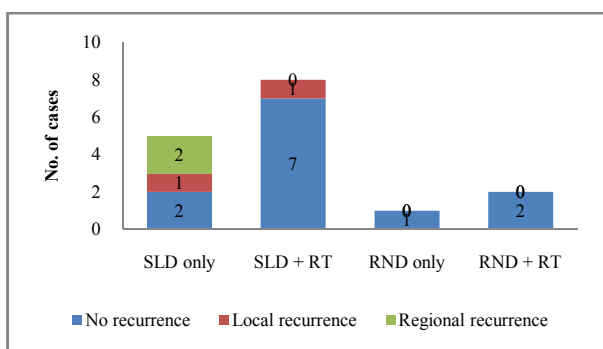
	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SLD only	4	2(50%)	0 (0%)	2 (50%)
SLD + RT	4	0 (0%)	0 (0%)	0 (0%)
RND only	0	0 (0%)	0 (0%)	0 (0%)
RND + RT	4	1 (25%)	0 (0%)	0 (25%)



**Table 2** Recurrence rates according to the nodal status (N)

**b)N1 lesions**

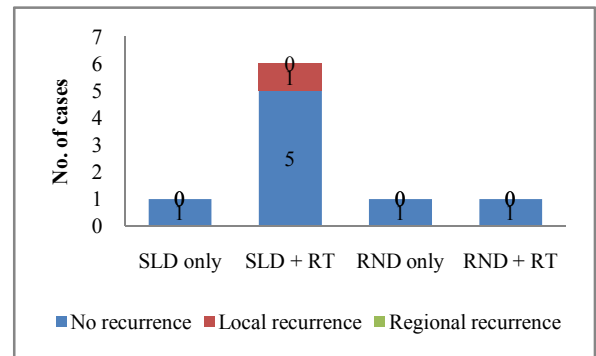
	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SLD only	4	1 (25%)	2 (50%)	2 (50%)
SLD + RT	8	1 (12.5%)	0 (0%)	1 (12.5%)
RND only	1	0 (0%)	0 (0%)	0 (0%)
RND + RT	2	0 (0%)	0 (0%)	0 (0%)



**Table 3** Recurrence rates according to the nodal status(N)

**c)N2a lesions**

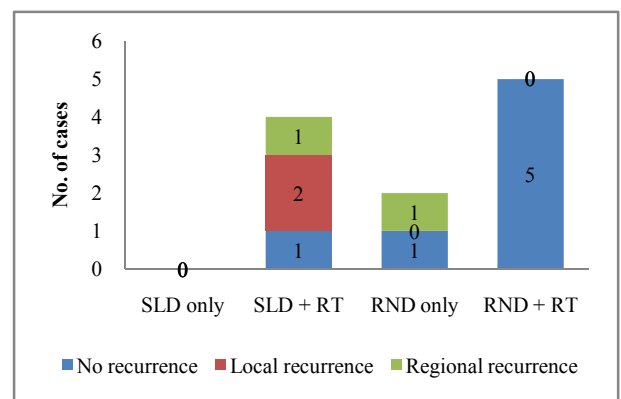
	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SLD only	1	0 (0%)	0 (0%)	0 (0%)
SLD + RT	6	1 (16.66%)	0 (0%)	1 (16.66%)
RND only	1	0 (0%)	0 (0%)	0 (0%)
RND + RT	1	0 (0%)	0 (0%)	0 (0%)



**Table 11** Recurrence rates according to the nodal status (N)

**d)N2b lesions**

	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SLD only	0	0 (0%)	0 (0%)	0 (0%)
SLD + RT	3	2 (66.66%)	1 (33.33%)	2 (66.66%)
RND only	2	0 (0%)	1 (50%)	1 (50%)
RND + RT	5	0 (0%)	0 (0%)	0 (0%)



**Table 12** Recurrence rates according to the nodal status(N)

**e)N2c lesions**

	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SLD only	0	0 (0%)	0 (0%)	0 (0%)
SLD + RT	0	0 (0%)	0 (0%)	0 (0%)
RND only	0	0 (0%)	0 (0%)	0 (0%)
RND + RT	1	0 (0%)	0 (0%)	0 (0%)

**Table 13** Recurrence rates according to the nodal status (N)

**a)N3 lesions**

	No. of cases	Local recurrence	Regional recurrence	Total Locoregional recurrence
SOH only	0	0 (0%)	0 (0%)	0 (0%)
SOH + RT	0	0 (0%)	0 (0%)	0 (0%)
RND only	0	0 (0%)	0 (0%)	0 (0%)
RND + RT	4	1 (25%)	1 (25%)	2 (50%)

**DISCUSSION**

In this study, total 12 cases were clinically node negative. Eight of them had undergone selective neck dissection and there was only 2 loco regional failure rate. Both the patient have local recurrence and not the regional recurrence. 4 patients had received radiotherapy and they had no loco

regional recurrence. Other 4 have not received radiotherapy, out of which 2 develops local recurrence. Other 4 patients have undergone radical neck dissection with radiotherapy and there is 1 loco regional failure rate. Normally, radical neck dissection is not recommended in N0 nodes but because the tumor staging (T) is T4 that's why we have done radical neck dissection here. A similar study was carried out at University of Pavia, Italy by Benazzo, Rossi and colleagues with 126 patients between 1990 and 1999. All the patients had N0 disease and all had undergone selective neck dissection with 25 receiving postoperative radiotherapy. Occult disease was found in 14 cases (11.11%) and out of these, 6 (42.85%) had extra capsular spread. Overall recurrence rate (local, regional and distant) was 12.8%. No difference was found in the recurrence rates between pN0 and pN+ patients and it was concluded that selective neck dissection is as effective as comprehensive procedures for staging and treating the clinically negative neck. Out of 15 patients with N1 disease, 12 had undergone selective neck dissection with 8 of them receiving postoperative radiotherapy. Only 3 patients had undergone radical neck dissection out of which 2 received postoperative radiotherapy. Among those who were treated with selective dissection alone had 50% loco regional recurrence (2 out of 4). Both had regional recurrence (50%) and 1 of them had local recurrence also (25%). Out of 8 patients who had undergone selective lymph node dissection with postoperative radiotherapy, 1 had developed local recurrence (12.5%) and there was no regional recurrence, thus making an overall recurrence rate of 12.5%. Out of 3 cases undergoing radical neck dissection, none had loco regional recurrence. Thus, it is seen that although radical neck dissection has better loco regional control, but selective neck dissection especially with postoperative radiotherapy appears to give an acceptable loco regional recurrence rate with much less morbidity compared to the radical neck dissection. The regional control rate seems to be better when we give postoperative radiotherapy (25% & 0% respectively). Also it is observed that 12 patients out of 15 with N1 disease had undergone selective dissection, thus emphasizing the growing trend towards the same in early nodal disease. A total of 9 patients had N2a disease, out of which 7 patients underwent selective neck dissection with 6 of them receiving postoperative radiotherapy. Only 1 out of these 7 (16.66%) had developed local recurrence and there was no regional recurrence. Two patients had undergone radical neck dissection and none had loco regional recurrence. Again the vast majority of patients who underwent selective neck dissection (7 out of 9) highlight the acceptability of this in N2a disease and the results are also acceptable. **Kowalski and Carvalho** in Sao Paulo, Brazil studied retrospectively 164 cases of oral cavity cancers with clinically N1 or N2a disease between 1970 and 1994. All the patients had undergone radical node dissection. It was found that only 1 patient (0.6%) had metastatic lymph node at level 4 and none at level 5. Interestingly, 69 patients (42.1%) were pathologically negative (pN0) !! In view of these findings, it was concluded that patients with N1 and N2a disease could be candidates for selective neck dissection (with or without including level 4) instead of radical neck dissection. [Head Neck 2002 Oct; 24(10):921-4]. This is further supported by the results of our study. Total of 10 patients in this study presented with N2b disease, of which 7 underwent radical neck dissection with 5 receiving postoperative radiotherapy. Out of these 5, none of them develops loco regional recurrence. Out

of these 2 patients who did not receive postoperative radiotherapy, 1 developed loco regional recurrence (50%). One patient (50%) had only regional recurrence. This emphasizes the role of postoperative Radiotherapy in the management of neck metastasis. Three patients had undergone selective neck dissection, all received post operative radiotherapy. Out of these 3, 2 (66.66%) develops local recurrence and 1 (33.33%) develop regional recurrence. Very few patients presented with N2c and N3 disease (1 and 4 respectively). All had undergone radical neck dissection with postoperative radiotherapy. 1 patient with N3 disease develops local recurrence (25%) and 1 develops regional recurrence (25%). It can be observed that -

1. As the disease presents at an advanced stage, more and more patients are subjected to radical neck dissection (70% in N2b and 100% in N2c and N3 in our study).
2. The results of radical neck dissection with postoperative radiotherapy are best in terms of loco regional control but in stage N2b patients, those undergoing selective neck dissection with postoperative radiotherapy had comparable results with those undergoing radical neck dissection alone (66.66% and 33.33% local and regional recurrence rates respectively as against 0% and 50% with radical neck dissection) [Table 11].
3. Postoperative radiotherapy does reduce the loco regional study rates, as evidenced by all our study groups [Table 4 to 15].

Now we review some of the studies done on similar subject worldwide:

1. Andersen and colleagues studied 106 patients retrospectively, who had clinically positive nodes, at the Oregon Health Science University, Portland USA. All the patients had undergone selective neck dissection and were followed up for a minimum of 2 years. The regional distribution was N1(54.71%), N2a (4.7%), N2b (26.4%), N2c (13.2%) and N3 (0.9%). In our study also, the distribution was similar with maximum patients belonging to N1 and N2b [Table 2]. Overall 9 patients experienced disease recurrence and it was concluded that selective neck dissection in patients with clinically positive nodes can achieve regional control rates comparable to those achieved with comprehensive operations in appropriately selected patients. [Arch. Otolaryngo. Head Neck Surg. 2002 Oct; 128 (10): 1180-84].
2. Muzaffar K. at The Loyal University Medical Centre, Illinois, USA did a 25 year retrospective study. 61 patient had undergone selective neck dissection, 54 underwent modified radical neck dissection and 61 underwent radical neck dissection. All have received postoperative radiotherapy and were followed up for a minimum period of 2 years. 3.3% of patients undergoing selective neck dissection had regional recurrence whereas 5.2% of the patients undergoing radical neck dissection or modified radical neck dissection had regional recurrence. Thus, it was concluded that selective neck dissection when used in combination with postoperative radiotherapy is an efficacious way to manage metastatic squamous cell carcinoma to the neck. [Laryngoscope. 2003 Sep; 113(9): 1460-5].
3. Ambrosch and colleagues, studying retrospectively 503 patients undergoing selective neck dissection at The

University of Goettingen, Germany, had concluded that the results achieved with selective neck dissection compare favorably with the results reported for modified radical neck dissection and the application of selective neck dissection might be extended to more advanced neck disease.[ Otolaryngol. Head Neck Surg. 2001 Feb; 124(2): 180-7]. Thus the results of our study are supported by these various workers.

## CONCLUSION

1. For patients with clinically negative neck nodes, selective neck dissection is as effective as radical neck dissection and recommended with postoperative radiotherapy
2. For patients presenting with N1 and N2a disease, selective neck dissection is almost equal effective as radical neck dissection, especially with postoperative radiotherapy. In view of the several advantages of selective dissection, like lower morbidity, lesser operative time, less complication rates and feasibility of bilateral dissection, if required, makes its use more frequent than radical neck dissection in such patients.
3. For N2b disease and beyond, the failure rates with selective neck dissection is slightly higher than with radical neck dissection. Although radical dissection gives the best loco regional control of the disease, selective neck dissection with post operative radiotherapy or one of the modifications of the radical neck dissection is being offered to carefully selected patients.
4. Postoperative radiotherapy does help in reducing the loco regional failure rates, with selective neck dissection as well with radical neck dissection.

To conclude, the management of the cervical nodes should be highly individualized and cafeteria approach should be offered to the patients, explaining the risks and benefits of the various procedures. Selective neck dissection, when used in combination with postoperative radiotherapy, is an efficacious way to manage metastatic squamous cell carcinoma to the neck

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