Evaluation of Quality of Life with Obturators in Patients Post Maxillectomies: An Original Research

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Abstract

Introduction: In this study we evaluated the quality of life with obturators in patients post maxillectomies

Materials and Methods: Thirty-six subjects were enrolled with maxillary defects, irrespective of the cause, planned for definite obturator prosthesis, were recruited. Head and Neck version 1 of Quality of Life Questionnaire was used before surgical intervention and one month after definitive obturator. Questionnaire includes 35 questions related to the patient's physical health, well being, psychological status, social relation and environmental conditions. The data were processed with statistical package for social science (SPSS). Probability level of P<.05 was considered statistically significant.

Results: The quality of life after rehabilitation with obturator prosthesis was 81.48% (±13.64) on average. On item-level, maximum mean scores were obtained for items problem with teeth (1.87 ± 0.94), pain in mouth (1.80 ± 0.92), trouble in eating (1.70 ± 0.88), trouble in talking to other people (1.60 ± 1.22), problems in swallowing solid food (1.57 ± 1.22) and bothering appearance (1.53 ± 1.04); while minimum scores were obtained for the items coughing (1.17 ± 0.38), hoarseness of voice (1.17 ± 0.53), painful throat (1.13 ± 0.43), trouble in having social contacts with friends (1.10 ± 0.40) and trouble having physical contacts with family or friends (1.10 ± 0.31).

Conclusion: Obturator prosthesis is a highly positive and non-invasive approach to improve the quality of life of patients with maxillectomy defects.

Keywords: Quality of life; Maxillectomy; Obturator prosthesis; Oral cancer

1. INTRODUCTION

Presently, the multitudinal impact of

maxillofacial tumors on a patient's life has been recognized, which led various researchers to investigate the quality of life of those patients. However, studies evaluating the quality of life of patients with maxillectomy defects and the effect of prosthodontic therapy with obturator prostheses on their quality of life remain rare.

The significant areas of treatment concern after maxillary resection are reconstruction of the defect and restoration of oronasal functions while maintaining the facial contours. The obturator prosthesis fulfills most of these requirements and it also reduces the procedure time and offers the possibility of immediate rehabilitation. It is possible to examine the surgical site after removing the prosthesis, and recurrence may be detected at an early stage.5-8 So, the obturator can be considered as a highly positive approach for rehabilitation after maxillectomy. However, in some cases, impaired obturator functioning and handling may lead to deficits in speech, swallowing mastication. or facial disfigurement, thereby resulting in patient dissatisfaction.1-10

Various investigators have found that orofacial deformities result in profound psychological and social consequences.11-13 Such subjects are more likely to encounter social negligence and usually negative personality traits. develop Maxillofacial injury rehabilitation represents one of the greatest challenges to public health service providers worldwide because of their high incidence and significant financial burden. They are often associated with morbidity and varying degree of physical, functional and aesthetic damages.12,13

Hence, in this study we evaluated the quality of life with obturators in patients post maxillectomies.

2. MATERIALS AND METHODS

Thirty six subjects were enrolled in the study for the span of sixteen months. Ethical approval was obtained from the institution.

The instructions regarding filling of questionnaire were explained to the

selected thirty six subjects, but for evaluation, only thirty subjects were available as six subjects had declined to be involved in the study. The Hindi version of European Organization for Research and Treatment of Cancer, Head and Neck version 1 of Quality of Life Questionnaire (EORTC QLQ-H &N 35) was used.

The questionnaire includes 35 questions related to patient's physical health, well being, psychological status, social relation environmental and conditions. The questionnaire was divided into two parts with initial 30 multiple choice questions, with scoring based on Likert scale of fourpoints, which were used to quantitatively measure the patient's perceived changes in the quality of life. Remaining 5 questions were dichotomous and were used for status evaluation of the patients. Patients were asked to complete questionnaire based on their experience during the past one week before surgical intervention, the same questionnaire was completed by the patient after definitive prosthetic rehabilitation. The quality of life of subjects was broadly divided into eight dimensions as follows:

Item Nos. 1-4	Pain				
Item Nos. 5-8	Swallowing				
Item Nos. 9-12	Teeth and	Mouth			
Item Nos. 13-14, 22 Se	enses				
Item Nos. 15-17	General	Health			
Item Nos. 19-21	Eating				
Item Nos. 18, 23-28 Social Item Nos. 29-30					
	Sex				

The probability levels of P < .05 were considered statistically significant for all statistical analyses.

3. RESULTS

The patient's perceived quality of life after rehabilitation with obturator was calculated to be 81.48% (± 13.64). Majority of patients belonged to age group <30 years and age group 51-60 years respectively, showing a bimodal age distribution. There were only 2 patients in age group >70 years. Mean age of patients was 46.83 ± 16.98 years.

Squamous cell carcinoma was the most common clinical diagnosis (50%)

responsible for maxillectomy. Surgery alone (n = 19; 63.3%) was the most common treatment modality used.

On item-level, maximum mean scores were obtained for items problem with teeth (1.87 ± 0.94), pain in mouth (1.80 ± 0.92), trouble in eating (1.70 ± 0.88), trouble in talking to other people (1.60 \pm 1.22), problems in swallowing solid food (1.57 \pm 1.22) and bothering appearance (1.53 \pm 1.04) while minimum scores were obtained for the items coughing (1.17 \pm 0.38), hoarseness (1.17 \pm 0.53), painful throat (1.13 \pm 0.43), trouble in having social contacts with friends (1.10 \pm 0.40) and trouble having physical contacts with family or friends (1.10 \pm 0.31) (Table 1).

Minimum effect on quality of life was observed for the sex related QOL whereas

maximum was observed for social life. At item-level. statistically significant reduction in mean scores was found for the items such as pain in mouth (P=.032), soreness in mouth (P=.001) and coughing (*P*=.025) (Table 1). A statistically significant increase in mean scores was observed for items such as problems in swallowing solid food, problem in opening mouth wide, trouble in eating, difficulty in eating food in front of family and other people, problem in enjoying food, difficulty in conversation to people and on the telephone, problem in making social contacts with friends, trouble in making public appearance and difficulty in making physi- cal contacts with others. For all the other items the change was not significant statistically (P > .05). Overall, no significant change in mean scores was observed.

	Mean	SD	Mean	SD	t	Р
1. Pain in mouth	1.80	0.92	1.33	0.84	2.249	.032
2. Pain in jaw	1.50	0.97	1.13	0.35	2.009	.054
3. Soreness in mouth	1.40	0.62	1.00	0.00	3.525	.001
4. Painful throat	1.13	0.43	1.00	0.00	1.682	.103
5. Problem in swallowing liquids	1.27	0.74	1.53	0.97	- 1.439	.161
6. Problem in swallowing pureed foods	1.23	0.63	1.27	0.52	0.571	.573
7. Problems in swallowing solid food	1.57	0.90	2.03	0.89	3.500	.002
8. Choking while swallowing	1.20	0.61	1.17	0.59	1.000	.326
9. Problem with teeth	1.87	0.94	1.90	0.76	0.254	.801
10. Problem in opening	1.47	0.78	2.10	0.76	- 5.641	.000

Table 1. Comparison of pre-treatment and post-treatment quality of life scores

mouth wide						
11. Dry mouth	1.37	0.76	1.47	0.73	- 0.902	.375
12. Sticky saliva	1.33	0.66	1.33	0.71	0.000	1.000
13. Problem with sense of smell	1.47	0.97	1.33	0.55	0.750	.459
14. Problem with sense of taste	1.20	0.48	1.23	0.43	0.328	.745
15. Coughing	1.17	0.38	1.00	0.00	2.408	.023
16. Hoarsene ss	1.17	0.53	1.07	0.25	0.902	.375
17. Feeling of illness	1.37	0.67	1.23	0.43	1.072	.293
18. Bothering appearance	1.53	1.04	1.60	0.62	- 0.441	.662
19. Trouble in eating	1.70	0.88	2.37	1.10	- 3.247	.003
20. Trouble in eating in front of family	1.37	0.85	2.03	1.13	- 3.162	.004
21. Trouble in eating in front of others	1.50	1.04	2.23	1.22	3.717	.001
22. Trouble in enjoying meals	1.37	0.81	2.10	1.06	5.117	.000
23. Trouble in talking to other people	1.60	1.22	2.37	1.25	- 4.173	.000
24. Trouble in taking on the telephone	1.43	0.90	2.07	1.20	3.072	.005
25. Trouble in having social contacts with family	1.23	0.57	1.37	0.85	0.891	.380
26. Trouble in having social contacts with friends	1.10	0.40	1.83	1.05	4.253	.000
27. Trouble	1.50	0.97	2.03	1.07	-	.001

going out in public					3.565	
28. Trouble having physical contacts with family or friends	1.10	0.31	1.53	0.90	2.765	.010
29. Less interested in sex	0.97	0.61	0.97	0.61	0.000	1.000
30. Less joy in sex	0.97	0.61	1.03	0.67	- 1.439	.161
Total	45.80	13.61	46.67	12.27	0.437	.665

4. **DISCUSSION**

The present study investigated the quality of life of patients with maxillectomy after rehabilitation with obturator prostheses. In spite of numerous researches regarding the quality of life after cancer therapy, only a few studies emphasize on the quality of life of maxillectomy patients rehabilitated with obturator.14-15

In the present study, thirty patients were investigated. Depprich *et al*.10 studied forty three patients, Rogers *et al*.11 interviewed ten patients, Hertrampf *et al*.6 evaluated seventeen patients.

In the present study, a 35-item head and neck module (EORTC QLQ-H&N35) was utilized. This standardized questionnaire allows a comparison between multiple study groups.

The quality of life after rehabilitation with obturator prostheses was calculated to be 81.48% (± 13.64). The direct comparison of these results with the previous studies are not possible as in different studies, different tests and scales were used to evaluate the quality of life.

In most of the previous studies, similar to the study conducted by Depprich *et al.*,10 only the quality of life after prosthetic rehabilitation was evaluated by a crosssectional study whereas in the present study, the quality of life before prosthetic rehabilitation as well as the quality of life after prosthetic rehabilitation have been assessed by a longitudinal study, thereby enabling us to simultaneously evaluate the change in the quality of life scores, which was found to be in order of significance of change as 0.665.

In the present study, age of patients ranged from 20 to 76 years. Majority of patients belonged to age group <30 years and age group 51-60 years respectively, showing a

bimodal age distribution. There were only 2 patients in age group >70 years. Mean age of patients was 46.83 ± 16.98 years. For younger patients, the quality of life score was 73.02% in comparison to the score of older age group which was 87.78% after prosthetic rehabilitation. Elderly patients, who anticipate to have age related physical illness, suffer less from distress related to cancer as compared with younger patients who feel that their life span has been shortened and their quality of life impaired due to the ailment.

Patients suffering from maxillofacial tumors develop coping strategies and so they gain an increase of quality of life after prosthetic rehabilitation. Most of the patients do not criticize their decision after knowing the treatment outcome and consider that being alive out- weighs the demerits of obturator therapy.

Good obturator function has been found to

be responsible for improved quality of life.4,6,16,17 However, in the present investigation, only the quality of life of maxillectomy patients after obturator was assessed but other domains related to the obturator function and the effect of family behavior, which also contribute to the quality of life were not studied in detail.

The present study found that except for change in scores for senses, general health and sex, for all the other dimensions a significant change was observed. Except for pain, for all the other dimensions where significant changes were observed, mean scores were found to be significantly increased after treatment. For pain a significant reduction in mean scores was found. For both pre- and-post-treatment minimum scores evaluations. were observed for the dimension sex whereas maximum scores were obtained for the item eating. No significant change in physical status was observed following treatment (P>.05). The reduction in pain scores as found in this study is contradictory to the previous studies done by Hertrampf et al. and Rogers et al.

In the present study, at item-level, statistically significant decrease in mean scores was observed for the items pain in mouth, soreness in mouth and coughing. A statistically significant increase in mean scores was observed for items - problems in swallowing solid food, problem in opening mouth wide, trouble in eating, difficulty in eating food in front of family and other people, problem in enjoying food, difficulty in conversation to people and on the telephone, problem in making social contacts with friends, trouble in making public appearance and difficulty in making physical contacts with others. The above observations of the present study are supported by the results obtained from study conducted by Depprich et al.10. In the present study, surgery alone (n = 19;63.3%) was the most common treatment modality availed followed by surgery + radiotherapy + chemotherapy (n = 5;16.7%), surgery + radiotherapy (n = 4;

13.3%) and surgery + chemotherapy (n = 2; 6.7%). According to the study conducted by Depprich *et al.*10, the most common treatment modality was surgery only.

It was found that squamous cell carcinoma was the most common clinical diagnosis (50%) followed by adenoid cystic carcinoma of hard palate (n = 4; 13.3%). Malignant melanoma (n = 3; 10%) and nasopharyngeal angiofibroma (n = 2; 6.7%) were the next most common diagnosis. Ameloblastoma, cleft lip and palate, cystic lesion, giant cell tumor, osteoclastoma and sinonasal solitary fibrous tumor were present in 1 (3.3%) case each.

The hypothesis that the quality of life of maxillectomy patients after obturation is acceptable is justified by the results of the present study. Future research on defect related newer obturator designs may help to overcome the problems typically associated with obturator prostheses and will help to improve patient's quality of life after maxillectomy in the future.

5. CONCLUSION

Obturator prosthesis is a highly positive and non-invasive approach to improve the quality of life of patients with maxillectomy defects.

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