



CASE STUDY

LOCOREGIONAL FLAPS USED IN ORAL CAVITY SURGICAL RESECTION

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ABSTRACT

Oralcancers are sixth most common cancers worldwide. The objectives of our study were to give a precise description of our experience with surgical based therapy of oral cancer during the study period, to evaluate the use of various locoregional flaps in the reconstruction of post ablation oral defects. 20 patients of oral carcinoma were included who underwent excision of tumors with neck dissections and reconstruction with one or multiple locoregional flaps.

INTRODUCTION

Extensive tissue defects in head and neck (oral cavity, nasal cavity, maxillary sinus and facial skin) are a challenge for reconstructive surgery. The goals and principles for reconstruction of these tissue defects, created by various etiologies, remains the same. (Eckardt *et al.*, 2007) The management of the defect depends upon the size of the defect, location of the defect, comorbid conditions of the patient and the type of defect. The reconstructive pyramid has been touted as the best approach to these kind of defects. In this pyramid, the reconstruction options begins with local tissue and progress to regional tissue reconstructions, and finally to free tissue transfer. The primary treatment modality for oral cavity cancer in most countries has been surgery. Post-operative radiotherapy is added for late stage disease but chemotherapy has historically been used in a relatively small proportion. (Parkin *et al.*, 2002) Defects resulting from extirpation in the oral and maxillofacial region (oral cavity, nasal cavity, maxillary sinus and facial skin) constitute major functional and aesthetic reconstructive challenges due to their complex three-dimensional nature. Various pedicled regional flaps, such as the deltopectoral flap, pectoralis major musculocutaneous flap, and forehead flap, have therefore been advocated.

MATERIALS AND METHODS

The study included 20 patients undergoing oral cancer surgeries with/without neck dissections with/without requiring reconstructive procedures to treat various post-surgical oral defects. Various surgical procedures and locoregional flaps that were used for reconstruction of oral defects were evaluated and data regarding them was obtained from the Department of Surgical Oncology, Gujarat cancer and research institute

Inclusion criteria

All patients who underwent surgical treatment for oral malignancies with/without neck dissections and/or locoregional flap transfer for reconstruction of the post-surgical defects.

Exclusion criterion

Patients who underwent reconstruction with free flaps. The 20 patients undergoing oral cancer surgeries with/without neck dissections with/without requiring reconstructive procedures to treat various post-surgical oral defects were the source of data. All the patients had a followup postoperatively, at 1 month interval for 2 months from the date of surgery in the Department of Surgical Oncology. Data concerning the characteristics of patient, surgical procedure for the tumor, neck dissection type, diagnosis of the defect, the modalities of reconstruction and the complications associated, was obtained

from the medical records. Patients were evaluated postoperatively by clinical examination.



Right Side Commisure Defect closed with Deltopectorial Flap

Table 1. Distribution of patients with oral malignancy who underwent surgery according to age and sex

| Age groups | Males | | Females | | Total | % of patients |
|------------|-------|----|---------|----|-------|---------------|
| | No | % | No | % | | |
| 0-20 | 00 | 00 | 00 | 00 | 00 | 00 |
| 21-40 | 02 | 10 | 00 | 00 | 02 | 10 |
| 41-60 | 07 | 35 | 03 | 15 | 10 | 50 |
| 61-80 | 02 | 10 | 05 | 25 | 07 | 35 |
| >80 | 00 | 00 | 01 | 05 | 01 | 05 |
| Total | 11 | 55 | 09 | 45 | 20 | 100 |



Right Side CA of Lower GBS + Buccal Mucosa with Skin Involvement Post Resection closed with PPMC Flap

Table 2. Distribution of patients according to site of malignancy in oral cavity

| Site of the malignancy | No. of patients (n=20) | % of patients |
|------------------------|------------------------|---------------|
| Buccal mucosa | 11 | 55 |
| Tongue | 06 | 30 |
| Retromolartrigone | 01 | 05 |
| Lip | 01 | 05 |
| Floor of mouth | 01 | 05 |
| Lower GBS | 00 | 00 |
| Upper GBS | 00 | 00 |
| Maxilla | 00 | 00 |



Reconstruction of Lip Commisure with Nasolabial Flap

Table 3. Distribution of patients according to type of locoregional reconstruction

| Type of reconstruction/flap used | No.of patients (n=20) | % of patients |
|----------------------------------|-----------------------|---------------|
| Primary closure | 08 | 40 |
| PPMC | 02 | 10 |
| Naso Labial Flap | 01 | 05 |
| Forehead | 01 | 05 |
| PPMC+DP | 08 | 40 |



Reconstruction of Lip commissure with Forehead Flap

RESULTS AND DISCUSSION

In the present study, the male: female ratio was 1.22: 1. Most of the patients belonged to 41-60 years of age (50%), followed by 61-80 years of age (35%). Youngest patient was 25 year old and oldest was 83 years old. The mean age was 57.05 + 14.1 Talabani *et al.* (2010), in their study, found that females were generally less affected than males and the highest affected age groups were those above 60 years, the peak of total malignant oral tumor was seen in their 6th decades of life (27.4%, 20 cases). Male to female ratio was 1.5:1. In their study of 45 cases, Musani *et al.* (2009) found that 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. Significant number of cases were seen below 30 years and the youngest patient was of 27 years of age. Kokemueller *et al.* (2011) found average age at diagnosis was 58.8 years,

ranging between 19.2 and 96.5 years. There were 226 men and 115 women (male/female ratio = 2:1) 4.2. In the present study, majority of patients of oral malignancy presented with malignancy of buccal mucosa (55%), followed by tongue (30%), retromolar trigone (5%), lips (5%) and floor of mouth (5%). Cancer cases of the lip represented the highest affected site for oral cancer (43.84%, 32 cases) in the study conducted by Talabani *et al.* (2010) followed by tongue (21.92%, 16 cases). Kokemueller *et al.* (2011) found that tumors were located in the following sites: 34 on the base of the tongue (6.4%), 138 on the oral tongue (26.0%), 52 on the gums (9.8%), 129 on the floor of the mouth (24.3%), 14 on the palate (2.7%), 71 on other parts of the mouth (13.5%), 84 on the tonsils (15.8%), and 8 on the oropharynx (1.5%) in their study. In the present study, 60% patients underwent wide local excision of tumor with neck dissection with locoregional flap reconstruction, 20 % underwent wide local excision of tumour with neck dissection only and 20 % underwent only wide local excision of the tumor. In the present study, 8(40%) patients underwent primary closure after excision of oral malignancy, 8(40%) had a pectoralis major with deltopectoral flap, 2(10%) underwent pectoralis major myocutaneous flap only, and 1(5%) each of V-Y advancement and forehead flap for reconstruction after excision of malignancy.

In the study conducted by Musani *et al.* (2009), 26/45 underwent primary closure, 24.4% underwent PMMC, 06.6% underwent DP flap, 06.6% underwent forehead flap, followed by nasolabial (4.4%), lingual flap (4.4%), split skin graft (22.2%) and k-wire in 08.8%. In the study conducted by Ribeiro *et al.* (2003) primary closure was done in 40.8%, local flaps in 2.8%, skin grafts in 1.5%, tongue flaps in 16%, PMMC in 25.1%.

Summary and Conclusion

Males were more commonly affected than females. Most of the patients were affected after 4th decade of their life. Most commonly used locoregional technique for reconstruction was with PMMC and DP flap to provide both external and internal lining after ablative surgery. In today's world of microvascular flaps, in spite of associated complications, locoregional flaps play a crucial role at oncology centers where skilled plastic surgeons are few and most surgeries are carried out by Head and neck surgeons. They offer an easier, faster, reliable option for reconstruction post ablative surgeries in head and neck region.

REFERENCES

- Eckardt A, Meyer A, Laas U, Hausamen J E. 2007. Reconstruction of defects in the head and neck with free flaps: 20 years' experience. *British J of Oral and Maxillofacial Surgery*, 45: 11-15.
- Funk GF, Karnell LH, Robinson RA, Zhen WK, Trask DK, Hoffman HT, 2002. Presentation, treatment, and outcome of oral cavity cancer: a National Cancer Data Base report. *Head Neck*. Feb;24(2):165-80
- Horst Kokemueller, Majeed Rana, Jennifer Rublack, Andre Eckardt, Frank Tavassol, Paul Schumann, Daniel Lindhorst, Issing PR, Kempf HG, Heppt W, Schönermark M, Lenarz T, (Reconstructive surgery in the head-neck area with regional and free tissue transfer). *Laryngorhinotologie*. 1996 Aug;75(8):476-82.
- Karina de Cássia Braga Ribeiro ; Luiz Paulo Kowalski; Maria do Rosário Dias de Oliveira Latorre, 2003. Perioperative Complications, Comorbidities, and Survival in Oral or Oropharyngeal Cancer, *Arch Otolaryngol Head Neck Surg.*, 129(2):219-228.
- Martin Ruecker, Nils-Claudius Gellrich, 2011. The Hannover experience: Surgical treatment of tongue cancer - A clinical retrospective evaluation over a 30 years period, *Head Neck Oncol.*, 3: 27.
- Muhammad Ayub Musani, Itrat Jawed, Saleem Marfani, Yousuf Khambaty, M. Jalisi, Shahbaz Ali Khan, 2009. Carcinoma cheek: regional pattern and management, *J Ayub Med Coll Abbottabad*, 21(3)
- Nazar G. Talabani, Khadija M. Ahmed, Farouk H. 2010. Faraj Oral Cancer in Sulaimani: A Clinicopathological Study, *Journal of Zankoy Sulaimani*, 13(1) Part A
- Parkin DM, Bray F, Ferlay J, Pisani P. *et al.* 2005. Global cancer statistics, *CA Cancer J Clin.*, 55: 74-108
- Satoshi Yokoo, Takahide Komori, Syungo Furudoi, Masahiro Umeda, Tadashi Nomura, Kazunobu Hashikawa, Akihiro Ichinose and Shinya Tahara, 2004. Three-dimensional reconstruction after oral oncologic surgery using single free radial forearm flaps or free rectus abdominis musculocutaneous flaps, *Journal of Oral Science*, Vol. 46(1): 65-70.
