

# SURGICAL FACTORS INFLUENCING QUALITY OF LIFE IN CARCINOMA ORAL CAVITY PATIENTS IN TERTIARY HEALTH CARE CENTRE

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## ABSTRACT:

**BACKGROUND:** In India most common cancer is carcinoma oral cavity. Most of the patients will present late to the physician so it will end up in devastating surgery and complex reconstruction. This results in poor quality of life. So it is important to diagnose and treat early for better survival.

**AIM:** The aim of this study was to determine tumor characteristics, surgical and reconstruction methods influencing the quality of life(QOL) in oral cancer patients.

**MATERIALS AND METHODS:** A prospective cross-sectional study, 30 surgically treated carcinoma oral cavity patients in our hospital, from august 2018 to march 2020 were included in the study. During follow-up, all patients completed the University of Washington Quality of Life Questionnaire (UW-QOL) containing 12 targeted questions about the head and neck.

**ANALYSIS:** Analysis were made with Quality of life scores comparing with infratemporal fossa clearance, buccal pad of fat removed or not, type of reconstruction, bipaddle or unipaddle, mode of node dissection, type of surgery, whether the surgery involving tongue, anterior tonsillar pillar removed or not, site of the tumor and stage of the tumor.

**RESULTS:** In our study, quality of life scores were low in patients with advanced disease needing additional intervention in terms of extension of surgery. Physical domains of appearance and chewing p value of 0.05 and 0.06 respectively in patients undergoing wide local excision and split skin graft. Surgery involving the tongue had poor QOL scores in swallowing, chewing and speech all measuring p value <0.2 compared with other sites. Bipodal flap and submental flaps showed equal cosmetic results as compared with unipedal PMMC flaps.

**CONCLUSION:** Consequence of the function deficit and morbidity depends upon the tumor and the surgery. As much as possible preserve anatomy and have been called 'organ preservation' such that anterior tonsillar pillar and buccal pad of fat should be preserved. Infratemporal fossa clearance is needed who have upper maxillary involvement. Submental flaps and split skin grafts should be promoted in early cases which has good quality of life outcomes. Reconstruction confers substantial benefit in reducing the morbidity. Early diagnosis and intervention is given priority to oral cancer patients such that extensive surgery can be avoided.

## INTRODUCTION:

Carcinoma oral cavity is a leading cause of cancer-related morbidity and mortality with the global annual incidence approaching 500,000. It includes carcinoma lip, buccal mucosa, tongue, hard and soft palate and pharynx. Proven risk factors are tobacco (smoked / non smoked)-important carcinogen ; Synergistic effect between smoking and chewing of tobacco, betel nut with quid (contains arecoline which causes collagen and fibroblast synthesis), alcohol, HPV Virus (16 and 18 subtype) and EBV virus. Synergistic effect between smoking and chewing of tobacco. Most common type is squamous cell carcinoma. Surgery with adjuvant therapy is the treatment of choice(7).

Surgery for oral cavity cancer includes wide local excision, hemimandibectomy or partial glossectomy along with lymph node dissection. Extensive surgery leads wide wound deficit which can be balanced by making flaps like Pectoralis major myocutaneous flap(PMMC, flexible "workhorse" of head and neck reconstruction), fibular flaps, free flaps, prosthetic implants are being done.

Surgery has long term problems like difficulty in swallowing and speaking which in turn patient lacks the ability to full functional lifestyle. Especially in rural areas it leads to stigma and Disease free survival and improved quality of life(QOL) is the ultimate aim of head and neck reconstruction. The WHO defines the quality of life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. Our final impact of our study is to get good quality of life after oral cavity cancer surgeries by indicating which patient will develop what sort of complication. Such that, we can implement the suitable option for the better outcome of the patient.

## MATERIALS AND METHODS:

This prospective randomized control study was conducted in our hospital from august 2018 to march 2020. Total of 30 patients were included in the study who was diagnosed biopsy proven carcinoma oral cavity and undergone wide local excision, hemimandibulotomy and reconstruction with PMMC were included in the study. Patient treated with chemotherapy, radiotherapy, submucosal fibrosis and older than 65 years of age were excluded in the study.

University of Washington Quality of Life (UW QOL) questionnaire version four is simple and provides us a scale for comparison of various methods and type of surgery(2). UWQoL is divided into 12 questions that assess domains such as pain, appearance, activity, recreation, swallowing, chewing, speech, shoulder, taste, saliva, mood and anxiety. Symptom scores for the UWQoL questionnaire range from 0 to 100 (maximal function = 100). We translated questionnaire in tamil and asked the patients to put scores(2).

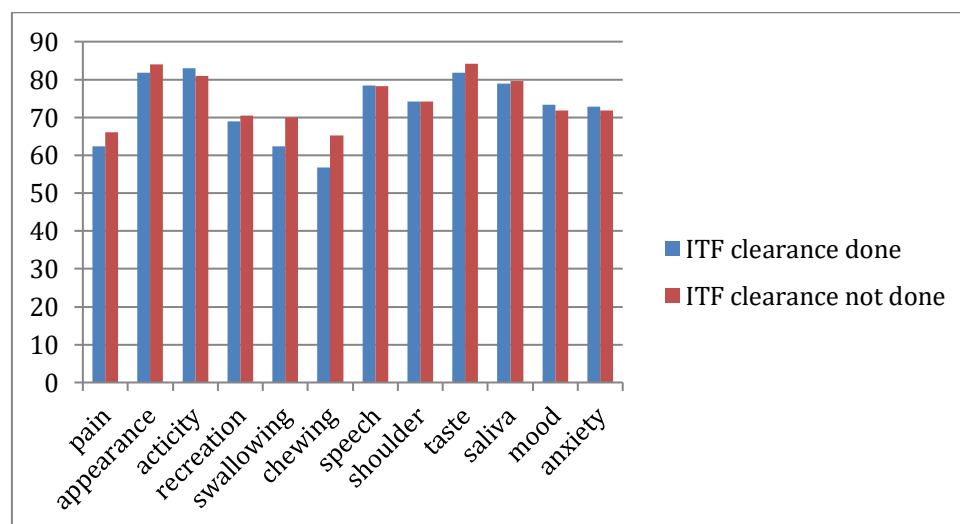
## Analysis:

The following ten factors were analyzed with regard to their impact on HRQOL: infratemporal fossa clearance done or not, buccal pad of fat removed or not, type of reconstruction, bipaddle or unipaddle, mode of node dissection, type of surgery, whether the surgery involving tongue, anterior tonsillar pillar removed or not, site of the tumor, stage of the tumor. Analyses were conducted using the chi squared and the Fisher's exact tests and the Student's t test. P-values < 0.05 were considered statistically significant.

## Results and discussion:

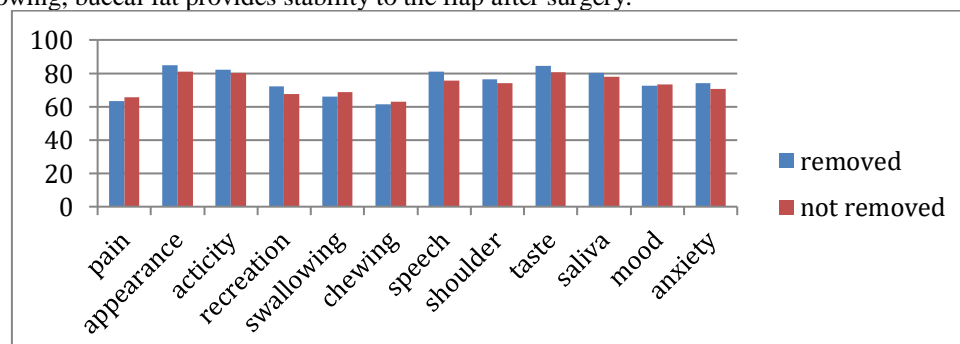
### Infratemporal fossa (ITF) clearance:

Patient with in whom infratemporal fossa clearance had chewing and swallowing difficulty than those with infratemporal fossa clearance in whom it hasn't been done (p value 0.49 and 0.43 respectively). Infratemporal fossa clearance provides us good margin for the tumor clearance but it has its own limitations so it can be avoided if circumstances provided.



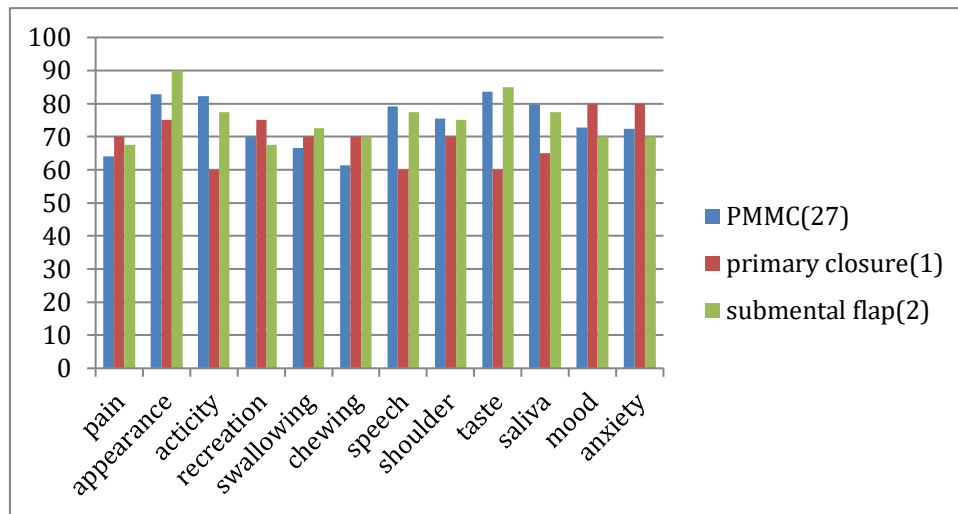
### Buccal pad of fat:

Buccal pad of fat is very fragile and its preservation maintains haemostasis. Chewing and swallowing difficulty (p value of 0.6 and 0.7 respectively) was present in patients whose buccal pad of fat has been removed. Although it not directly linked with chewing and swallowing, buccal fat provides stability to the flap after surgery.



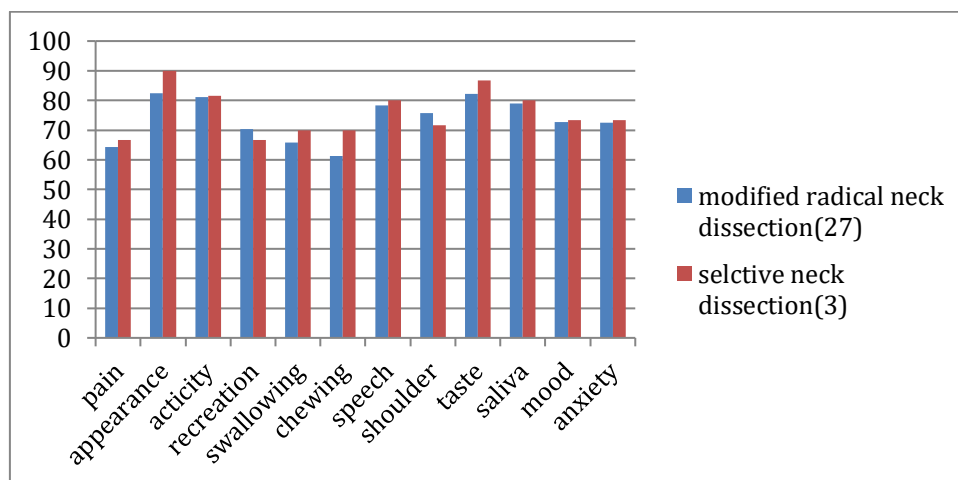
### Reconstruction:

As expected all the domains are being well tolerated in patients with sub mental flap. Taste and speech were affected in patients with primary closure since hemiglossectomy was done for those patients. PMMC is the power horse of head and neck reconstruction. QOL scores were low in patients with primary closure since it was involving tongue.

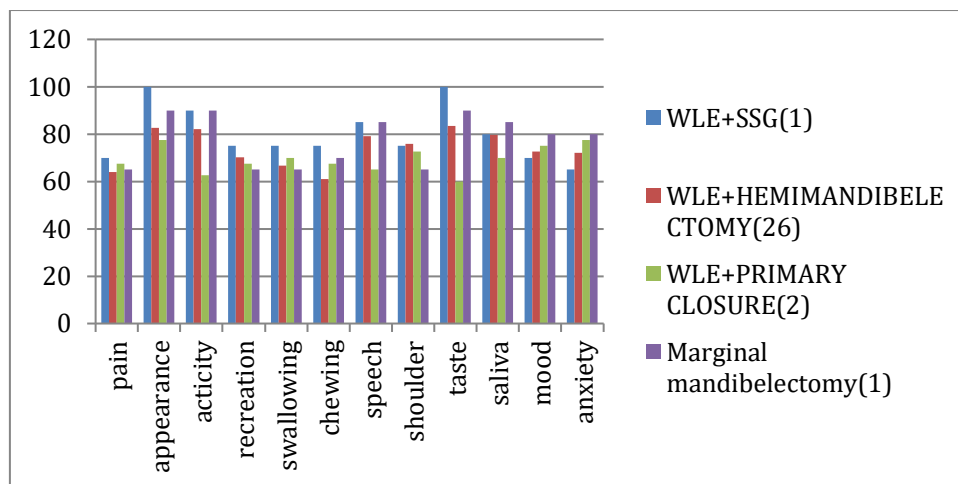


### Neck dissection:

Neck dissection is the important prognostic factor, depends upon the number of lymph nodes removed. In advanced cases modified radical lymph node dissection is the treatment of choice. Selective dissection is advised in early cases. There was no statistically difference in patients with type of lymph node dissection except minor differences in the appearance (p value 0.4) and chewing (p value 0.3) who have undergone modified radical lymph node dissection.

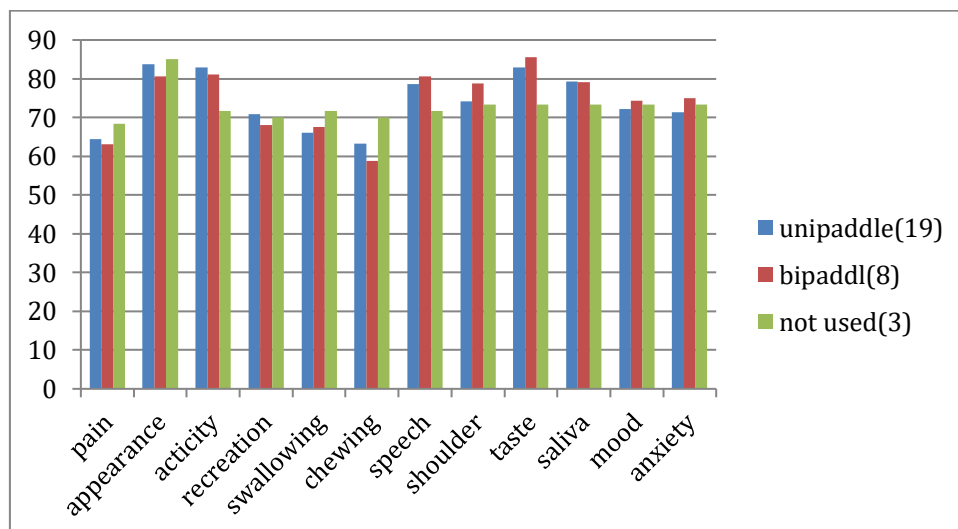


**Type of surgery:** It proves that wide local excision may be done if the tumor is early. Appearance and chewing was statistically significant in cases with wide local excision with split skin graft (p value of 0.05 and 0.06). If at all wide local excision can be done, it should be giving priority. Reconstruction can be done either by split skin graft or primary closure if the edges can be brought together. In hemi mandibulectomy patient, there was significant decrease in scores of appearance, activity, swallowing, chewing and speech. It again signifies the importance of early diagnosis of the patient which can potentially change the quality of life.



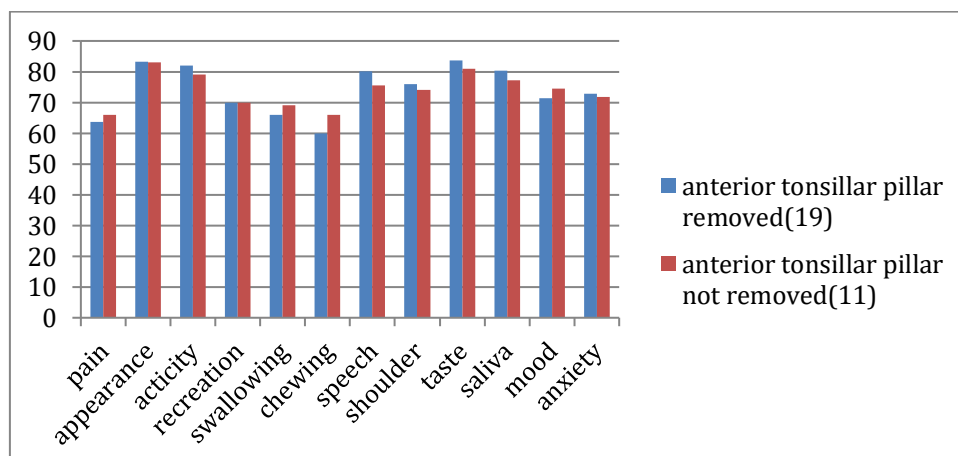
### Type of Pectorlis major myocutaneous flap(PMMC):

Pectorlis major myocutaneous flap is the method of choice for majority of patients, since it can be reconstructed and modulated according to area deficit. Bipaddle PMMC reconstruction is helpful to cover skin deficit. Analysis shows there is better chewing and shoulder QOL scores(p values 0.6 and 0.7 respectively). There was no obvious change in the patient score according to the type of paddle used in PMMC.



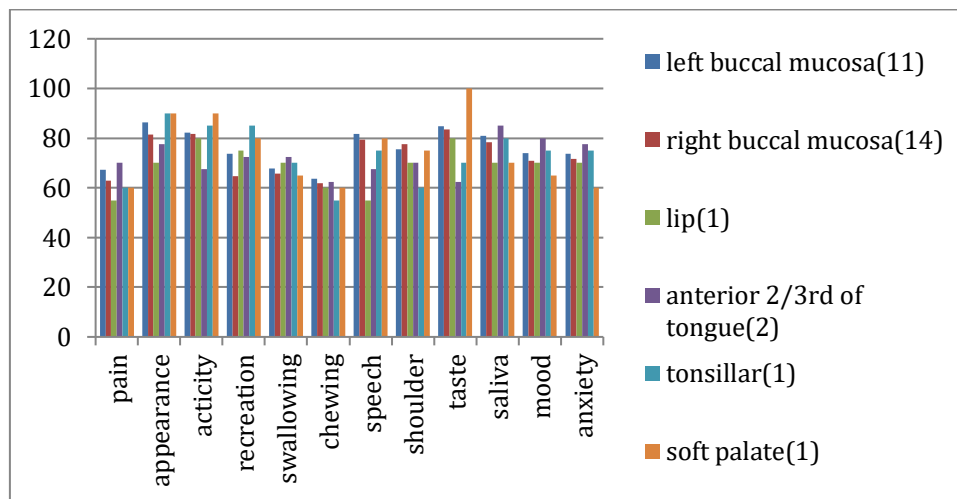
### Anterior tonsillar pillar:

Tonsillar pillar forms the posterior boundary of oral cavity and its invasion is closely related to mandibular and base of skull invasion. Its removal will result in severe swallowing and chewing difficulties(p value 0.6 and 0.5 respectively). As expected there was chewing and speech deficit was present in whom anterior tonsillar pillar was removed.

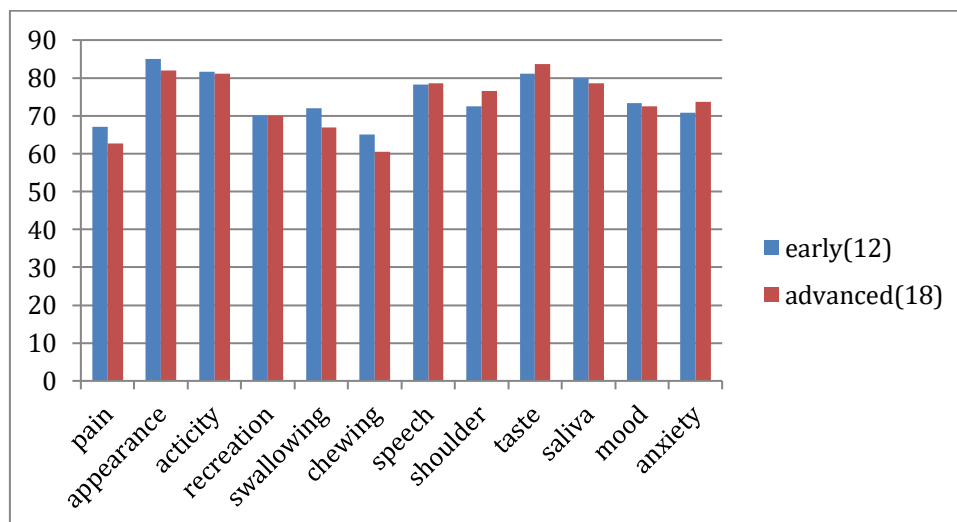


**Site of the tumour:**

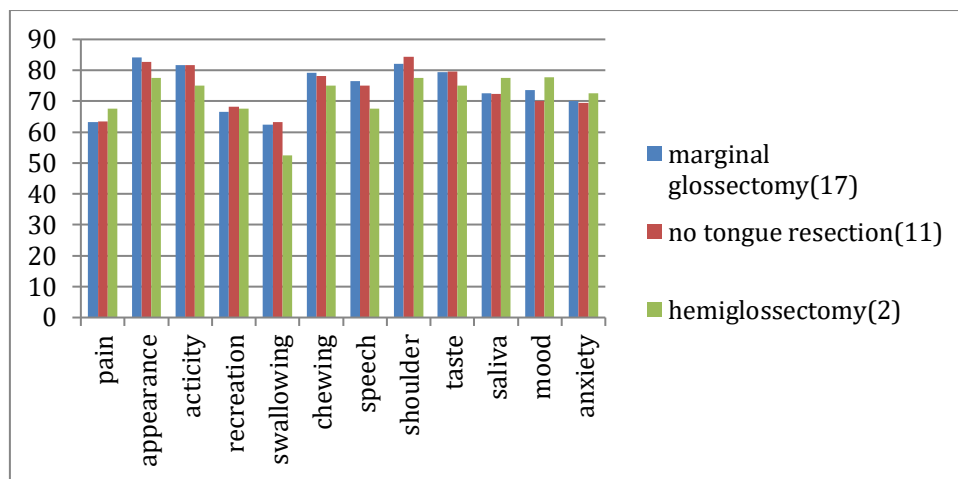
Tumour involving the tongue and lip is associated with difficulties in speech, swallowing, and taste (statistically p value was 0.2 for all domains). Regurgitation was the major complaint in patients with tumour in the hard palate. In our study, patients with left buccal mucosal cancer has good quality of life when compared to the right side.

**Stage of tumour:**

Patient presenting with early stage the surgery is less invasive than those with advanced stage. Hence QOL scores were low in advanced cases especially in swallowing(p value 0.5) and chewing(p value 0.6) domains. The consecutive destruction of nerve, bone, and muscle structures negatively influences chewing and speaking. It signifies the early detection that helps in maintaining good quality of life. As expected with early stage tumour advanced stage tumour has poor quality of life. Appearance is better in patient with early stage.

**Type of tongue resection:**

The tongue is also essential for propulsion processes. Patient who have undergone hemiglossectomy has poor quality of life scores in certain domains like chewing (p value 0.003), shoulder (p value 0.191817) and saliva (p value 0.286347). Scores were better in cases where tongue resection has not been done.



## CONCLUSION:

Patterns of invasion have become better understood, imaging modalities have improved and treatment protocols refined (7). Quality of life depends on various factors size and stage of the tumor and also type of surgery alter the quality of life. Bipodal flap has equal outcomes in terms of appearance. As much as possible anterior tonsillar pillar and buccal pad of fat should be preserved. Infratemporal fossa clearance is needed who have upper maxillary involvement. Submental flaps and split skin grafts should be promoted in early cases which has good quality of life outcomes. Early diagnosis and intervention is given to oral cancer patients such that extensive surgery can be avoided and aiming for better quality of life and decrease the burden of living with cancer.

## ABBREVIATIONS:

HRQOL: Health-Related Quality of Life;

PMMC pectoralis major myocutaneous flap

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