



Decision making in T4b lesions of Oral cancer- When not to operate

¹Dr. Atish Kundu, Reader, Head and Neck Cancer Consultant, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

²Dr. Susmriti Dey, Department of Oral and Maxillofacial Surgeon, Rama Staff Accommodation Lakhanpur, Kanpur, 208024, U.P, Kanpur.

³Dr. Afshan Afreen, Post Graduate Resident, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

⁴Dr. Anurag Vats, Post Graduate Resident, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

⁵Dr. Sardar Singh Yadav, Senior Lecturer, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

⁶Dr. Zuheb Khan, Post Graduate Resident, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

Corresponding Author: Dr. Anurag Vats, Post Graduate Resident, Department of Oral and Maxillofacial Surgery, Rama Dental College and Hospital and Research Centre, Lakhanpur, Kanpur, 208024, U.P, Kanpur.

Citation this Article: Dr. Atish Kundu, Dr. Susmriti Dey, Dr. Afshan Afreen, Dr. Anurag Vats, Dr. Sardar Singh Yadav, Dr. Zuheb Khan, “Decision making in T4b lesions of Oral cancer- When not to operate”, IJMSIR- March - 2022, Vol – 7, Issue - 2, P. No. 182 – 186.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Introduction: Head and neck carcinoma accounts for significant burden of cancer worldwide. According to AJCC 2018 the tumours are classified as T_{4b} stage tumour, whenever the masticator space (MS), pterygoid muscles (PM), and pterygoid plates (PP) are involved. Until recently, these tumours were considered inoperable and treated only with palliative intent. The local recurrence rate is very high due to poor understanding of the extent of tumour spread in masticatory space and infratemporal region, due to technical difficulty in surgical clearance.

Aim & objectives: The study aims to provide an overview in decision making for operability in T4 lesions in patients with tumour’s involving masticatory spaces and extending to different levels of infratemporal fossa.

Material & methods: Data of 80 patients who underwent ITF clearance for very advanced oral cancers were collected between August 2016 to December 2019 and the outcome was recorded for the same.

Keywords: Gingivobuccal sulcus complex, very advanced disease, infra-temporal fossa (ITF)

Introduction

Head and neck carcinoma books for substantial weight of cancer worldwide. In India, it accounts for 30% of new

cancer cases and is the most common cancer in the male population. A mainstream of these patients presents in locally advanced stage (> 50%). Gingivobuccal sulcus complex (GBC) cancers are the most common type of head neck cancers in India. Locally advanced head neck cancer has unfortunate consequences with a median survival of 6–9 months. Masticator space involvement in advanced GBC cancers is staged as T4b disease and as “very advanced disease” in the American Joint Committee on Cancer (AJCC 7th) classification.

The anatomy of infra-temporal fossa (ITF) and masticator space is grim to understand. Involvement of ITF and masticator space with cancer is grim to assess on radiological imaging. In addition, restricted clinical examination due to associated trismus makes the situation further problematic to precisely stage the disease and the degree of spread. The complicated anatomy of masticator space because of a multifaceted bony compartment and numerous perilous neurovascular structures makes resection of these tumours precisely thought-provoking.

Conventionally, T4b cancers of oral cavity are believed unfeasible. These patients are treated with palliative bent on with radiation and chemotherapy either alone or in combination. The surgery is a worthwhile choice however is not fully sightseen owing to struggle to attain clear margins and elaborate anatomy of the region.

Material & methods

Study was performed on 80 patients operated for locally advanced oral squamous cell carcinoma extending to infratemporal fossa and staged T4b according 2018 AJCC classification (8th edition). The study period was between August 2016 to December 2019 in the head and neck oncology department of our hospital, and the outcome was recorded for the same. Majority of these

patients were males. All these patients had involvement of muscles of mastication and were evaluated clinically as well as by contrast enhanced CT scan.

80 patients were divided into 3 groups. Group A have 20 patients where lesion involving only masticatory space without going in infra-notch of ITF. Group B have 24 patients in which lesion were extending into infra-notch of ITF and Group C have 36 patients which is further divided into 2 groups that is Group C_A in which 16 patients were there and lesion extend into lateral part of supra-notch of ITF and Group C_B have 20 patients in which lesion extend to the medial part of supra-notch of ITF (table 1).

After the surgical clearance of the lesion few patients gone for adjuvant therapy and few haven't taken any adjuvant therapy. All patients were followed for the mean time period of 19 months and reviewed on the basis of the lesion recurrence and morbidity of the patients.

Results

All patients were followed for the mean time period of 19 months and reviewed on the basis of the lesion recurrence and morbidity of the patients. In our study in Group A out of 20 patients, 18 (90%) patients went for adjuvant therapy and 2 (10%) haven't taken adjuvant therapy and we found that 2 (10%) patients come with recurrence and 1 (5%) patient lost life. In Group B out of 24 patients, 21(87.5%) patients went for adjuvant therapy and 3 (12.5%) haven't go for adjuvant therapy and we found 4(16%) patients comes with recurrence and 1(4%) patient lost life. In Group C_A out of 16 patients, 12 (75%) patients went for adjuvant therapy and 4 (25%) haven't went for adjuvant therapy and we found 2 (12.5%) patients comes with recurrence and 3 (18.5%) patients lost life while in Group C_B out of 20 patients, 18 (90%) patients went for adjuvant therapy and 2 (10%) haven't

went for adjuvant therapy and we found 8 (40%) patients comes with recurrence and 4 (20%) patients lost life. (Table 2, 3, 4 and chart 2)

Table 1: Showing no. of patients of the three groups

Group	Patients
Group A: masticatory space without going in infra-notch	20
Group B: going in infra-notch of ITF	36
Group C _A : lateral part of supra-notch of ITF	16
Group C _B : medial part of supra-notch of ITF	20

Chart 1: Group segregation

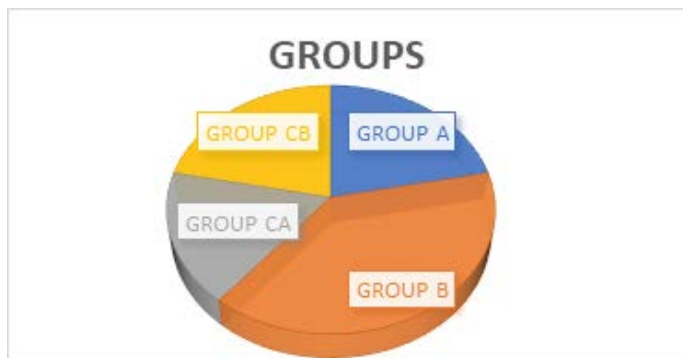


Table 2: Group A patients

Patient s	Pt with AT	Pt with NAT	Recurren ce	Morbidity
1	Y		N	N
2	Y		N	N
3	Y		N	N
4	Y		N	N
5	Y		N	N
6	Y		N	N
7		Y	Y	Y
8	Y		N	N
9	Y		N	N
10	Y		N	N

11		Y	Y	N
12	Y		N	N
13	Y		N	N
14	Y		N	N
15	Y		N	N
16	Y		N	N
17	Y		N	N
18	Y		N	N
19	Y		N	N
20	Y		N	N

Table 3: Group B patients

Patient s	Pt with AT	Pt with NAT	Recurren ce	Morbidity
1	Y		N	N
2	Y		N	N
3	Y		N	N
4		Y	Y	N
5	Y		N	N
6	Y		N	N
7	Y		N	N
8	Y		N	N
9	Y		Y	Y
10	Y		N	N
11	Y		N	N
12	Y		N	N
13	Y		N	N
14	Y		N	N
15		Y	Y	N
16	Y		N	N
17	Y		N	N
18	Y		N	N
19	Y		N	N

20	Y		N	N
21		Y	Y	N
22	Y		N	N
23	Y		N	N
24	Y		N	N

Table 4: Group C_A patients

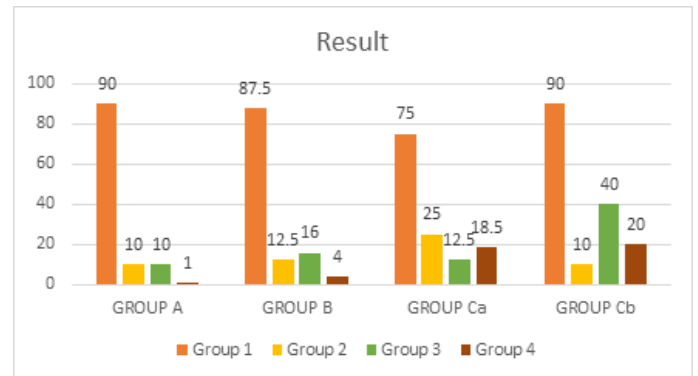
Patient s	Pt with AT	Pt with NAT	Recurrence	Morbidity
1		Y	N	Y
2	Y		N	N
3		Y	N	Y
4	Y		N	N
5	Y		N	N
6	Y		N	N
7	Y		N	N
8		Y	Y	N
9	Y		N	N
10	Y		N	N
11	Y		N	N
12	Y		N	N
13	Y		N	N
14	Y		N	N
15		Y	Y	Y
16	Y		N	N

Table 5: Group C_B patients

Patient s	Pt with AT	Pt with NAT	Recurrence	Morbidity
1	Y		Y	N
2	Y		N	N
3	Y		Y	N
4	Y		N	N
5		Y	Y	Y
6	Y		N	N

7	Y		N	Y
8	Y		N	N
9	Y		N	N
10	Y		Y	N
11	Y		N	N
12	Y		Y	N
13		Y	Y	Y
14	Y		N	N
15	Y		Y	N
16	Y		N	N
17	Y		N	N
18	Y		N	N
19	Y		N	N
20	Y		Y	Y

Chart: 2 results of data (AT- Adjuvant therapy, NAT - Non-Adjuvant therapy)



Discussion

The infratemporal fossa has been defined as an “Irregular non-fascial lined space lying medial to inner surface of vertical ramus of mandible and zygomatic arch”. The contents of ITF include medial and lateral pterygoid muscles, pterygoid plates, insertion of temporalis muscle, V3 nerve, chorda tympani, otic ganglion, internal maxillary artery and fat and pterygoid venous plexus. Soft tissue margin is one of important predictors for local control, and ITF clearance as removal of all remnant muscles, bone, fibro-fatty tissue and neurovascular bundle in ITF as described earlier.

Traditionally, cT4b tumours of buccal mucosa GB complex has been described as unresectable until it was revised in the 7th edition of AJCC. There is a dearth of literature on the management of this group of patients with a majority of data being retrospective studies specially done in Indian subcontinent and south-eastern Asian region. Liao et al. divided these tumours as supra-notch and infra-notch and within their limited data set suggested supra-notch tumours are associated with worse outcomes. Though there are few studies suggesting aggressive resections in this selective subgroup of patients might be feasible and improve outcomes

Locally advanced disease extending to infra temporal fossa was considered inoperable till the last decade. This was due to difficult access, troublesome bleeding and positive margins in muscles of mastication. Tumour resection medial to the infratemporal region has unfavorable outcome and tumour lateral to the infratemporal region has favorable outcome.



Figure 1: A. Side profile of the patient with tumour extending up to ITF, B. skull base tumour clearance

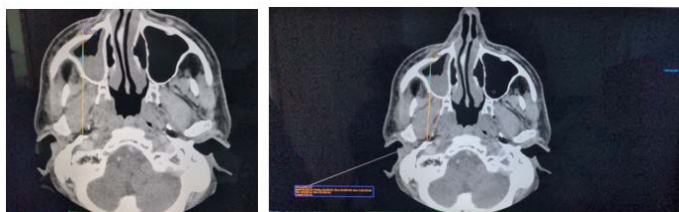


Figure-2: axial view compartmental division of ITF

Conclusion

Imaging can be very helpful in the determination of resect ability for head and neck cancers. The decision to

attempt extensive and significantly morbid resections for tumour control must rest with the surgeons and patients and should be, in part, based on the most accurate imaging techniques available. Resection in this area need precision and good knowledge of anatomical structure which make T4b tumours of the infratemporal region very much resect able.

References

1. Liao C.T., Chang J.T., Wang H.M. et al. (2006) Surgical outcome of T4a and resected T4b oral cavity cancer.
2. Liao C.T., Ng S.H., Chang J.T. et al. (2007) T4b oral cavity cancer below the mandibular notch is resectable with a favourable outcome.
3. Greene F.L., Page D.L., Fleming I.D. et al. (2002) AJCC Cancer Staging Manual, 6th edn. Springer-Verlag, New York
4. Karakousis C.P., Kontzoglou K. & Driscoll D.L. (1998) Anterior compartment resection of the thigh in soft-tissue sarcomas.
5. Stotter A., Fallowfield M., Mott A. et al. (1990) Role of compartmental resection for soft tissue sarcoma of the limb and limb girdle.
6. Calabrese L., Giugliano G., Bruschini R. et al. (2009) Compartmental surgery in tongue tumours: description of a new surgical technique.
7. Calabrese L., Bruschini R., Giugliano G. et al. (2011) Compartmental tongue surgery: long term oncologic results in the treatment of tongue cancer.
8. Radical (compartment) resection for advanced buccal cancer involving masticator space (T4b): (2012) Our experience in thirty patients: Trivedi, N.P., Kekatpure, V. & Kuriakose, M.A. Department of Head and Neck Oncology.