

Pain Management of Oral Carcinoma in Geriatric Patients

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Abstract

Introduction: Oral carcinoma in geriatric age group presents a challenge in terms of morbidity and mortality. There are challenges in form of age related illnesses and ability of the oncologist to administer surgery and chemotherapy.

Most patients have a bad prognosis due to above factors. This study was carried out in 8 patients over a 2 year period in patients aged 65 and above.

Patients and Methods: Laser ablation was offered as an alternative to patients not fit or willing for a long duration surgery. Diode laser was used under sonography control for the procedure in all patients. Multiple small sessions were used to control the growth of tumor. Post procedure various adjuvant modalities were used depending on patient acceptance which are enumerated in the study.

Results: All patients had a very good pain relief and freedom from tumor swelling. Most patients had an overall survival increase from 8 months to 2 yrs. There was no on table mortality. The overall ablation time was under 1 hour in most patients. Quality index measurements showed as satisfactory score. The OS was largely dependent on overall health status of the patient and size of tumor.

Conclusion: Laser ablation for geriatric patients of oral carcinoma is a viable alternative procedure for palliation and overall survival increase. It gives a better quality of life and it is a safer procedure for palliation than a full scale surgery in geriatric stage 4 inoperable patients. More research needs to be done for adopting this new modality of laser with Radiation.

Keywords: *Laser Ablation for Oral Cancer; Geriatric Oral Cancer; Unresectable Oral Carcinoma; Radiotherapy for Oral Carcinoma*

Introduction

Pain is an uncomfortable feeling that tells you something may be wrong. It can be steady, throbbing, stabbing, aching, pinching or described in many other ways. Sometimes, it's just a nuisance, like a mild headache. Other times it can be debilitating.

The four major types of pain

Nociceptive Pain: Typically the result of tissue injury. Inflammatory Pain: An abnormal inflammation caused by an inappropriate response by the body's immune system. Neuropathic Pain: Pain caused by nerve irritation. Functional Pain: Pain without obvious origin, but can cause pain [1].

Oral cancer is leading public health problem in Iran. Around 77000 cases are reported annually in Iran. 65 to 70% cases are reported in Geriatric age group. 70% of patients in this age group present with advanced stage 4 disease [1-3]. Geriatric oral cancer in Iran has a lot of demographic issues. Chief among them are lack of Social security and illiteracy. The dentist: population ratio is 1:27,000 in urban areas and 1:300,000 in rural areas, whereas 80% of the elderly population reside in rural Iran. Dental programs catering to special needs of the geriatric population are almost nonexistent. Geriatric patients lack adequate information about dental care. Chief problems include missing dentition, ill-fitting dentures, periodontal disease, long term tobacco use. Nutritional decrease and decrease in Vit D levels contribute to increased incidence of oral problems including carcinoma. Mobility issues and financial issues contribute to a late presentation [4].

Traditionally advanced oral cancer has been a multidisciplinary approach. Radiotherapy in Stage 4 disease accompanied by surgery or chemotherapy is the preferred approach.

Radiotherapy alone is advocated only in early oral carcinoma [5-7]. Conventional surgery which involves radical resection followed by reconstruction is a time consuming affair. The surgery lasts anywhere from 8 to 12 hours. Many geriatric patients are not medically fit to undergo the resection procedure.

Barely 20% of unresectable patients reach resectability following Neoadjuvant chemotherapy. The median OS in resectable patients is 19 months and in unresponsive patients is 8.8 months [8].

Chief comorbid conditions which compromise the management of oral carcinoma include cardiac compromise, hepatobiliary compromise, chronic kidney disease, recent cardiac surgery, recent stroke, suboptimal weight. These were the main problems encountered in our study.

The main treatment which is regularly employed in our patients is laser ablation followed by chemotherapy in stage 4 disease. Radiotherapy is employed in very selected cases where chemotherapy cannot be administered due to patient constraints [9].

All patients were analysed on basis of Quality Index [9].

Patients and Methods

8 patients were included in this study over a 5 year period. Their age groups ranged from 65 to 85 years of age. With a mean of 75 yrs.

Laser Diode machine was used in this study of 60W. This was of a standard make by Gigaa laser. All the patients were assessed for inoperability of standard surgical procedure. The patients had been deemed inoperable due to various factors (Table 1). The lesions were distributed all over oral cavity with majority of them in the buccal mucosa (Table 2).

This study was carried out between January 2017 and July 2020. A written and informed consent was obtained from all patients.

The first procedure was a major debulking procedure carried out under General Anesthesia. Time for all procedures was under 1 hour. Minor Laser procedures were carried out in 2 patients for small recurrences. These sessions were under 5 minutes in duration. The bleeding in most cases was not significant and no patient has had a blood transfusion due to blood loss during surgery.

Radiotherapy was administered as a palliative dose of 10 sessions at 2 Gy/session.

All patients were male.

Medical problems	Number
Cardiac insufficiency	2
Cirrhosis	3
Chronic Renal disease	2
Advanced age	1

Table 1: Distribution of Medical problems in the patient group.

Site of primary	Number
Buccal	6
RMT	1
Hard Palate	2

Table 2: Distribution of sites of various lesions.

The procedure was explained to the patient and the oncologist opinion as to inability to administer Chemotherapy was taken into account and explained to the patient.

Results

All patients had a satisfactory result (Table 3-5) and the OS was comparable to surgical resection in an ideal condition with age and extent of tumor taken into account.

OS was between 8 month minimum to 2 yrs maximum. All patients had a good palliative relief from swelling and pain within 1 month of the procedure with Radiotherapy.

2 patients had to undergo nasogastric tube feeding for a month due to radiotherapy mucositis of oral cavity. 1 patient has osteoradionecrosis of the mandible after 6 months.

Quality index measurements

Sr no	Feature	1 point	Nos	2 Points	Nos	3 points	Nos
1	Cosmesis	Confined to home	0	Confined to family and friends	8	Able to interact with office colleagues	0
2	Diet	Tube feeding	0	Liquids	4	Full diet	4
3	Speech	Hand gestures	0	Family	0	Comprehensible by everyone	8
4	Pain	Pain killers all day	4	Once a day	3	No pain killers	1
5	Drooling from mouth	All day	0	Intermittent	0	None	8
6	Sleep	Sedatives	0	Intermittent	2	Full sleep	6
7	Weight	Loss by more than 10% of pre surgery	5	Same as pre surgery	2	Weight gain	1

Table 3: Distribution of post laser and radiotherapy recovery.

Time	1 point	2 Points	3 Points	4 Points
Months	0 to 6 months	6 to 18 months	18 months to 24 months	More than 24 months
Nos	0	7	1	0

Table 4: Survival time for the patients.

Quality index

Quality of life X quantity of life

	Points	Nos
Poor	7-10	0
Average	10 to 14	1
Satisfactory	15 to 40	7
Good	41 to 84	0

Table 5: Individual patient's result summed up on quality index.

Illustrated Cases

Case 1

65 year old patient with history of Systolic dysfunction. He had ejection fraction of 25%.

No prolonged surgery or Post laser chemotherapy was possible without endangering his life.

He underwent laser ablation of tumor and Post laser radiotherapy of 10 sessions of 2 Gy each.



Figure 1: Carcinoma buccal ith extensive involvement showing swelling and Skin involvement.



Figure 2: Post laser and radiotherapy after 6 months. Swelling decreased and skin lesion healed.



Figure 3: Pre Laser side view.



Figure 4: Side view after 6 months.



Figure 5: Angle of mouth involvement with intraoral ulcerations.



Figure 6: Resolution of lesion with healing of angle of mouth.

Case 2

70 year old male with history of chronic kidney disease. The presence of CKD did not allow any chemotherapy without aggravating the existing problem.

He underwent Laser Ablation of Buccal carcinoma followed by 10 sessions of Radiotherapy of 2 Gy each.



Figure 7: 70 year old male with extensive inoperable ca buccal with tumour protrusion from below mandible.



Figure 8: Post laser and radiotherapy 4 months. Resolution of swelling.



Discussion

Men are more likely to get mouth cancer than women. This may be because, on average, men tend to drink more alcohol than women. Mouth cancer can develop in younger adults. HPV infection is thought to be linked with the most mouth cancers that happen in younger people. Overall, the lifetime risk of developing oral cavity and oropharyngeal cancer is: about 1 in 60 (1.7%) for men and 1 in 140 (0.71%) for women. A number of other factors (Described in oral cavity and oropharyngeal cancer risk factors) can also affect your risk for developing mouth and throat cancer [10].

Oral cancer as discussed earlier is a major health problem in Iran. Wide consumption of Tobacco and Alcohol is attributed to the alarming statistics in Iran. Dental problems in the form of sharp tooth or ill-fitting dentures are also causative factors in this cancer [10]. Most patients present in India with stage 4 cancer also called inoperable or unresectable cancers due to late diagnosis and lack of primary health care in many areas [10].

For resectable OSCC, surgery is the mainstay of treatment. In unresectable tumors radiotherapy and chemotherapy become the second option. In old patients and with multisystem disorders radiotherapy becomes the sole option in large unresectable cases. Brachytherapy is recommended in only small well-defined lesions [11].

Laser works by exposing the tumour to localized heat. It causes local death of tissue, denaturation of proteins, endothelial damage and retrograde thrombosis [12,13]. The time of surgery is significantly lower, about 1 hour in most cases [9]. Therefore the risk of anesthesia is lowered.

The OSCC in Iran is different from western countries since the cause is tobacco and related products. This leads to an extensive infiltrative disease with marked surrounding dysplasia which in course of time returns or transforms into anaplasia [14]. The survival rates therefore are significantly lower in Iranian setting [15,16].

Radiation dosage is calculated on basis of gross tumour volume (GTV), clinical target volume (CTV) ideally [17] and planned tumour volume (PTV).

GTV is the seen and palpable tumor and CTV is the area around it. PTV is the area beyond CTV.

With approximately 95% of GTV tumour necrosed by laser and viable tumour only in peripheral areas, lesser amount of radiation is used. It is assumed that the tumour cell density in the CTV is lower than in the GTV and consequently the radiotherapy dose may be lower [17].

The side effects of radiotherapy are quite significant. Chief amongst them are xerostomia, mouth ulceration, hyperpigmentation, oral fibrosis, freezing of tongue.

These side effects were less and for a shorter duration in these patients due to a decreased amount of radiation dosage.

Quality of life in these patients and survival were significantly better as seen in the analysis in quality index (Table 3-5).

Conclusion

Laser ablation in Geriatric Unresectable oral cancers can play a significant role in coming years to give a quality palliation to these patients. The morbidity is considerably lower and OS is better with a combination of laser with radiotherapy. Lower dose of radiotherapy is an added advantage in this modality.

More research needs to be done for results in combining laser with radiation.

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