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Case Report

Can definitive chemoradiation offer a cure along with cosmesis in locally advanced IVA carcinoma buccal mucosa? a case report

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ABSTRACT

Surgery is the mainstay of the treatment in ca buccal mucosa. It is extensive in nature and may require efficient reconstruction for good cosmetic outcome. Adjuvant radiation or chemo-radiation may be needed in advanced cancers. Definitive chemoradiation or palliative radiation are reserved for inoperable patients. We present a case report of advanced carcinoma of oral cavity in the left buccal mucosa along with involvement of retromolar trigone along with bone involvement in left sided mandible who opted out for undergoing definitive surgery. She was treated with definitive chemoradiation with 2.4 Gy per day /0.4 Gy in morning, 2 Gy in evening five days a week along with paclitaxel on Sunday. Patient reported after seven years disease free with excellent cosmetic outcome. Definitive surgery along with adjuvant radiation or chemoradiation is the standard of care in advanced cancers of buccal mucosa. However, in inoperable patients or the patients refusing surgery definitive chemoradiation with altered fractionation schedules may still offer a chance of cure and good cosmesis.

Keywords: Definitive chemoradiation, Ca buccal mucosa, Paclitaxel

INTRODUCTION

GLOBOCAN 2020 estimates about 377,713 (2%) new cases of oral cavity along with lip cancers and 177,757 (1.8%) of new deaths owing to this cancer.[1] Squamous cell carcinoma of the buccal mucosa is an aggressive cancer with a high locoregional failure rate even in patients with T1-2N0 disease. Possible reasons include inadequate treatment and an intrinsically aggressive nature.[2]

Cancer of oral cavity, especially advanced buccal mucosa poses a treatment challenge to the oncologist as it is an aggressive cancer and has multiple potential routes of spread to the adjacent areas of head and neck. Similarly, other subsites such as cancers of retromolar trigone maybe advanced at presentation along with underlying bone invasion as only thin layer of soft tissue overlies the bone. First and foremost, goal of the operating surgeon is to obtain a clear three dimensional margin. Adequate tumor-free margins are pivotal for local recurrence free survival. Post op chemo RT, not re-resection, can improve LRFS in patients with <5.0 mm tumor-free margins.[3]

In addition to that successful rehabilitation after such a complex surgery requires a meticulous reconstruction which should address functions such as speech swallowing and appearance. On the other hand, if we consider primary radiation therapy as a treatment option we must remember that keratinizing well differentiated histology of many oral cancers portray a relative radio resistance. Here we present a case report of a 60-year-old female who opted out for undergoing definitive surgery and was treated with definitive chemoradiation.

CASE REPORT

60-year-old female patient presented with the chief complaint of swelling in the left side of the jaw for six months. She was apparently well six months back when she noticed a swelling in the left jaw which was initially small in size but later increased to the present size. It was associated with pain, difficulty in chewing and left sided ear ache. She had no comorbidities and was vegetarian, non-smoker and did not consume alcohol.

Her general physical examination revealed pallor and rest of the findings were within the normal limits. On local examination there was a large swelling of 7×6 cm extending from the tragus of left ear to the symphysis menti of the mandible. Neck contour was normal and laryngeal crepitus was present there was no palpable lymphadenopathy. In examination of the oral cavity, oro-dental hygiene was poor, the mouth opening tongue protrusion were restricted. An infiltrative type of growth was seen in the left buccal mucosa approximately four cm posterior to the angle of mouth superiorly extending to involve the left upper gingival buccal sulcus and inferiorly involving left lower gingival buccal sulcus. Posteriorly involving upper and lower retromolar trigone. Anterior tonsillar pillar, posterior tonsillar pillar and posterior pharyngeal wall was within normal limits. Indirect laryngoscopy examination could not be done because of the restricted mouth opening.

Figure 1 (a) and (b): Good cosmetic outcome in T4a ca buccal mucosa post chemoradiation with acceptable radiation induced late toxicities.

Patient was further investigated and computed tomography (CT) scan was done. On CT scan there was a presence of ill-defined lobular heterogeneously enhancing mass of size 5.5×6.3×5.8 cm causing extensive lytic destruction of the mandible involving left ramus and left sided body symphysis menti and medial part of right side of body of the mandible. The mass was extending to the skin and subcutaneous tissue on the lateral aspect and surrounding fat stranding and loss of fat planes with left submandibular gland. Posterior this mass was extending to the muscles and the floor of mouth and base of tongue on left side. This mass also had indistinct fat planes with the body and left cornu of the hyoid bone. Sub centimetric lymph node was seen in station IB and II largest measuring 7 mm. Nasopharynx was normal however oropharyngeal airway was narrowed by the posteriorly displaced tongue. Epiglottis, vallecula, true and false vocal cords, bilateral parotid glands were within normal limits.

Biopsy was taken from this mandibular swelling which revealed moderately differentiated squamous cell carcinoma. In metastatic workup chest X-ray was within the normal limits and ultrasonography of abdomen and pelvis were was also within the normal limits. The patient was staged as T4a N0 M0, stage IVA. The opinion was taken regarding surgery but after discussing the possible extensive nature of the surgery, reconstruction possible morbidity and the outcomes the patient refused surgery and opted for radiation therapy.

Patient was planned on RT 0.4Gy in the morning and 2 Gray in in the evening six hours apart, total of 2.4 Gray per day five days a week (Monday to Friday) along with injection paclitaxel 100 milligram given on Sunday. There was treatment break on day 16 due to grade IV oral mucositis. Patient was symptomatically managed, and RT was restarted. Total treatment time was 54 days. Total of 72 gray was delivered with this schedule in 30 morning fractions of 40 cGy and 30 evening fractions of 2 Gy six hours apart. Routine blood investigations like complete hemogram and liver function test (LFT), renal function test (RFT) were monitored on a weekly basis. Patient had manageable hematological toxicities. Patient defaulted for seven long years and now reported to us with no symptoms and is disease free since past seven years with excellent cosmetic outcome. She had acceptable grade 1 skin, mucosal and salivary gland toxicity.

DISCUSSION

Surgery is the mainstay of treatment in oral cavity cancers. For the smaller lesions of buccal mucosa trans oral resection is preferred but in larger tumors T3 or T4 multiple modalities like surgery combined with radiation therapy or chemoradiation is required. As reported by Kim et al cancers originating from the buccal mucosa invade adjacent anatomical structures, surgical tumor resection becomes more challenging, thus raising specific considerations for reconstruction relative to the extent of resection.[4] The patient refused to undergo surgery when she was explained about extensive nature of surgery and reconstruction needed for cure and good cosmesis. She opted for definitive radiation therapy only. In this patient we gave paclitaxel 100 mg on Sunday and the radiation treatment was given throughout the week from Monday to Friday. Paclitaxel is a taxane which causes cellular arrest in G2M phase of cell cycle, induction of apoptosis, reoxygenation of tumor cells and thus the goal of combining chemotherapeutic drugs with RT is to increase patients' survival by improving locoregional control, decrease or eliminates distant metastasis, or both while preserving organ function and integrity.[5] The cell cycle phase also determines a cell's relative radiosensitivity, with

cells being most radiosensitive in the G(2)-M phase, less sensitive in the G(1) phase, and least sensitive during the latter part of the S phase.[6] Thus the rationale behind giving paclitaxel a day before was to ensure that all the cells are arrested in G2M phase and when the radiation is being given the very next day the cells all the cells are in radiosensitive phase thus amounting to aggressive cell kill. Patient had received total of 72Gy by shrinking field technique with conventional 2D technique by two parallel opposed fields. She is disease free after seven years with excellent cosmesis and with acceptable late radiation induced toxicities (Figure 1a and b).

In a study by Bachar et al the 5-year overall survival rate was 69%. The 5-year disease-specific and recurrence-free survival rates were 76.4% and 46%, respectively. The only significant predictors of survival were the nodal status and extra nodal extension.[7] Foster et al reported their experience of 120 patients in 20 years that definitive CRT is a viable and feasible strategy for organ preservation for patients with locally-advanced OC-SCC.[8]

CONCLUSION

Ca buccal mucosa is an aggressive disease with transoral wide excision adequate treatment for early-stage lesions however, a combined approach and an elective neck dissection should be considered in advanced lesions. However, in inoperable patients or the patients refusing surgery definitive chemoradiation with altered fractionation schedules may still offer a chance of cure and good cosmesis.

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