

## CASE REPORT

# Management Of Locally Advanced Oral Carcinoma With Mandibular Reconstruction: A Case Report And Review Of Literature

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## ABSTRACT

**Introduction:** Mandibular reconstruction using titanium reconstruction plate sandwiched between a pectoralis major myocutaneous flap and forehead flap after ablative surgery for locally advanced tumors of the oral cavity along with modified radical neck dissection is a better technique. In our report we have tried to present a time tested technique of pectoralis major myocutaneous flap along with forehead flap and its advantages for such large and complex defects.

**Case report :** A single case of oral cavity cancer was operated by excision of the lesion all around, segmental mandibulectomy and reconstructed with titanium reconstruction plate covered with a pedicled pectoralis major myocutaneous flap and forehead flap and with proper and better pre-, intra- and post anaesthetic care. No recurrence till date has been seen. Patient is on continuous follow up.

**Conclusion:** Surgery by modified radical neck dissection and mandibular reconstruction using titanium plates covered with a double flap is a reasonable approach for such locally advanced lesions.

**Keywords:** Oral cancer, Mandibular reconstruction, Pectoralis major myocutaneous flap

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## INTRODUCTION

A proper case history along with staging and detailed examination, preoperative evaluation for surgery and consideration of possible future complications and emotional disturbances should be taken into account for surgery. Informed consent from the patient should be taken. Head and neck reconstruction surgery has gone through many changes and better esthetic compliance of the patient is seen with present form of surgeries. In our case mandibular reconstruction using titanium reconstruction plates covered with pectoralis major myocutaneous flap after ablative surgery for locally advanced tumors of the oral cavity with forehead flap and forehead flap along with modified radical neck dissection was done and found to be of a good technique. In our report we have tried to present a modified technique of pectoralis major myocutaneous flap along with forehead flap and its advantages over older procedures for the defects. Also we have tried to present a better anaesthetic approach for the surgery. Throat packs should be used during operation and also removed at the end of surgery before extubation to prevent airway obstruction.<sup>1</sup>

## CASE REPORT

A 53 year old male presented to the outpatient department, Department of Otolaryngology and Head and Neck Surgery, Assam Medical College, Dibrugarh, Assam, India, with a chief complaint of swelling over the left side of buccal cavity.

His blood pressure was 110/70 mm of Hg. Laboratory data were as follows: Hb 13.34mg/dl,

white blood counts 13,200 per  $\text{mm}^3$ , ESR 12 mm AEFH, Differential count  $\text{N}_{79}\text{L}_{14}\text{M}_{02}\text{B}_{00}\text{E}_{05}$ , random blood sugar 67 mg/dl, urea 29.2 mg/dl, creatinine 1 mg/dl, ALT 46 IU, AST 32 IU and platelet count 2.49 lac/ $\text{mm}^3$ . In Fig.1-2 we can see that there is a malignant soft tissue growth in the gingival aspect of left inferior gingivo-buccal sulcus extending from left central incisor to left third molar tooth with lytic destruction of underlying mandible bone along with level IA, level IB and bilateral level II lymphadenopathy. His FNAC examination report was ultrasound guided and taken from left mandibular swelling suggesting non keratinizing squamous cell carcinoma. His stage was T4N1M0.

## TREATMENT MODALITIES

### Pre-operative care

The patient was properly planned for operative procedures and pre-operative investigations included all routine investigations, liver function test, renal function test, chest x-ray, ecg, serology for infectious diseases etc. Apart from these tests a CT scan was performed. In Airway assessment with Mallampatti Grading was II.

### Intraoperative and anaesthetic care

A haemodynamically stable patient, during and after surgery, is the main goal of anaesthetists. The prime anaesthetic concern is prevention of the aspiration of blood, minimization of blood loss and prevention of airway obstruction in the postoperative period owing to surgical manipulation. In this report, after securing the cuffed endotracheal tube, a throat pack was inserted as an additional measure to prevent aspiration. Throat packs should be removed at the end of surgery before extubation to prevent airway obstruction.<sup>1</sup>

The patients showed the following findings-

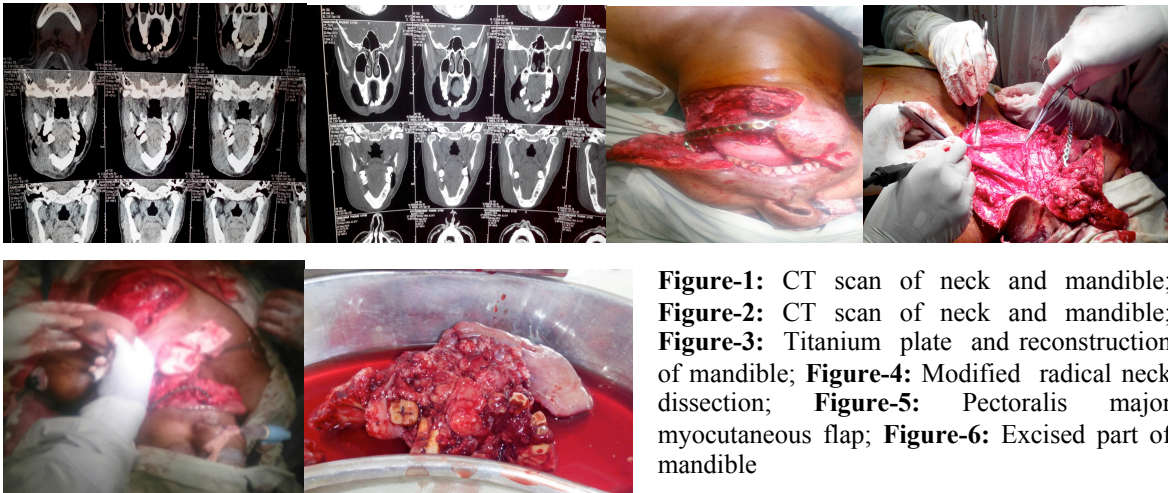
	Blood Pressure	Pulse rate	SPO <sub>2</sub>
Baseline	140/90 mm Hg	98	100%
After Induction	120/76 mm Hg	88	100%
After Intubation	150/94 mm Hg	102	100%
Intra-operative	110/70 mm Hg	72	100%

Premedication included polonosetron, glycopyrolate, tramadol, pantoprazole. Induction was

achieved with propofol and muscle relaxant for maintenance was achieved with atracurium. Reverse and extubation achieved with neostigmine and glycopyrolate when patient was awake and responding to verbal commands. During the whole operative period of around 10 and half hours, the patient received three units of whole matched human blood and 1500 ml of crystalloids. His urine output was well maintained during the whole operative period.

### Surgical Approach

Modified radical neck dissection and mandibular reconstruction using forehead (Figure-3-6), pectoralis major myocutaneous flap and titanium plates. An incision was given below the left lower margin of mandible extending to the mid part of the upper lip in an angular fashion. Skin and subcutaneous tissue elevated and the whole part of the diseased area around  $8 \times 2 \times 4 \text{ cm}^3$  was dissected and excised off along with modified radical neck dissection. The mandibular defect was reconstructed with the help of an angular titanium reconstruction plate of dimension 16 cm length, 2.5 mm thick and fitted properly with screws of 2.5x10 mm size. The course of thoracoacromial artery was outlined and the size and configuration of skin paddle and muscle required to cover the defect was demarcated. Lateral thoracic artery was preserved by dividing the humeral head of pectoralis major muscle. The initial incision for the flap was made along the lateral border of the outlined skin for the pectoralis major flap and was carried down up to the muscle. The pectoralis major and its underlying fascia along with vascular pedicle was lifted upwards keeping the pedicle under vision after dividing the inferior attachments from rib and rectus sheath. The flap was placed anterior to the clavicle passing underneath the skin tunnel. Excessive twisting of PMMC was avoided and the skin margins along with the skin margin of the forehead flap were sutured to the defect site. Two separate suction drains were given, in the neck and in the anterior chest wall. The chest wall was closed by suture after mobilization of the surrounding skin. The forehead was closed with skin graft taken from the anterolateral part of left thigh. The defect of thigh was also closed by suture after mobilization of the surrounding



**Figure-1:** CT scan of neck and mandible;  
**Figure-2:** CT scan of neck and mandible;  
**Figure-3:** Titanium plate and reconstruction of mandible; **Figure-4:** Modified radical neck dissection; **Figure-5:** Pectoralis major myocutaneous flap; **Figure-6:** Excised part of mandible

skin.<sup>2</sup>

### Post-operative care

The patient was fully kept under strict monitoring for 48 hours and during that period his blood pressure was maintained at an average of 124/80 mm Hg with an average SPO<sub>2</sub> of 99% with 12 hours of free flow oxygenation by mask. Clindamycin was given in post operative period as it binds to leucocytes and reaches to the demarcated end of the flap.

**Outcome:** The patient presenting to the department was male of age 53. The patient received utmost care and needful surgical treatment. No recurrence was found. There were no complications during the whole period.

### DISCUSSION

The importance of pectoralis major myocutaneous flap for the reconstruction of large post surgical defects in head and neck surgery was first described by Ariyan in 1970.<sup>3</sup> Mathes was the first person to describe a systemic approach in reconstruction of head and neck. However, his description of reconstruction ladder was focused towards closure of defect. There was no consideration of esthetics and function. With the evolution of reconstructive techniques and the focus of life in cancer treatment, the esthetic and functional outcome has become an important criteria in selecting a reconstruction.<sup>4</sup> These days it is widely accepted that reconstruction should be performed immediately following the major ablative resections.

The problems in this surgery is basically with the size and the three dimensional nature of the defect as the defect needed both lining and cover along with bony reconstruction. So there was a requirement of two well vascularised flaps. By using these two flaps we have minimized the chance of exposure of the plate. Even if the patient require radiotherapy later on, due to the presence of well vascularized flaps, tolerance will be better. As we have used the bulkier flap inside and the thin and pliable flap outside the esthetic outcome is very satisfactory. No complications were seen during harvesting the flap and both the donor and recipient site were healthy. The patient received utmost care and needful surgical treatment. No complications or recurrence was found.

### CONCLUSION

Head and neck reconstruction surgery has gone through many changes and better esthetic compliance of the patient is seen with present form of surgeries. Mandibular reconstruction using titanium plates covered with a pedicled pectoralis major myocutaneous flap after ablative surgery for locally advanced tumors of the oral cavity with forehead flap along with modified radical neck dissection is a better technique for stage 4 cancer of oral cavity. It has a better esthetic effect and long term emotional compliance of the patient is good.

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