

Hemi Mandibulectomy with Definitive Prosthesis

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ABSTRACT

Background: A standout amongst the most difficult and requesting maxillofacial undertakings is the development of useful dental prosthesis for an edentulous patient who has experienced a mandibular resection. A hemimandibulectomy can have many weakening results, for example eccentric occlusion, distorted speech a muddled masticatory cycle, facial deformation, and salivation issues. This case report introduces the administration of the Hemimandibulectomy understanding with definitive segmental hybrid prosthesis with rien of attachment.

Keywords: Hemi mandibulectomy, mandible, prosthesis, squamous cell carcinoma.

INTRODUCTION

Cantor and Curtis gave a hemimandibulectomy arrangement to edentulous patient that can likewise be connected in incompletely edentulous arches.¹ Apart from the deviation of mandible to resected side, different dysfunctions watched are trouble in mastication, swallowing, speech, mandibular movements, and even respiration.² Hemimandibulectomy has an adverse effect on the physiological functions as well as esthetics which may result in a psychological trauma. It is reported in the literature that the hemimandibulectomy patients have managed with their disability by using their proprioceptive feedback to balance for deviation towards resected side.³ The treatment option for such patients should be directed towards dealing with dysfunctions like difficulty in swallowing, speech, mandibular movements, mastication and impaired esthetics.⁴ This case report depicts prosthodontic administration of a patient who has experienced a hemimandibulectomy and was restored utilizing a definitive segmental hybrid prosthesis with rien of

attachment intended to satisfy the patient's necessities and prerequisites.

CASE REPORT

A 68 year old male Patient reported to the dept. with the chief complaint of ulcer and swelling in lower left mandibular region. Incisional biopsy was done and patient was diagnosed with squamous cell carcinoma. Surgical treatment: patient got his segmental mandibulectomy without disarticulation upto sigmoid notch, including coronoid process, wide local excision with radical neck dissection and reconstruction with Pectoralis major myocutaneous flap was done. Post operative check up after 3 months: patient had completely healed mandibular surgical site with slight deviation on the resected site. Extraction was done w.r.t 47, 48 and endodontic treatment w.r.t- 46, 45 and 43. Prosthodontic management: It was noted that mandible can be guided to centric occlusion manually but the patient could not achieve this position consistently on his own. So the treatment objective was to correct the deviation of mandible and to restore proper occlusion for mastication.

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Thus definitive segmental hybrid prosthesis with
rien of attachment was given.



Fig 1: Segmental Hemimandibulectomy.



Fig 2: Surgical post operative.



Fig 3: Intra oral Frontal, Maxillary and Mandibular
view.



Fig 4: Intraoral Occlusal, Frontal, Right lateral and
Left lateral view.



Fig 5: Primary Impression.



Fig 6: Diagnostic Casts.

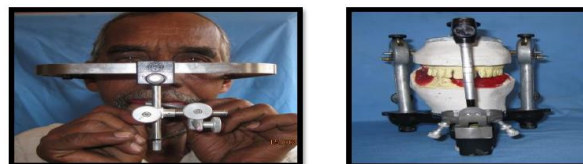


Fig 7: Face -Bow Transfer, Jaw -relation recorded
and cast mounted on articulator.

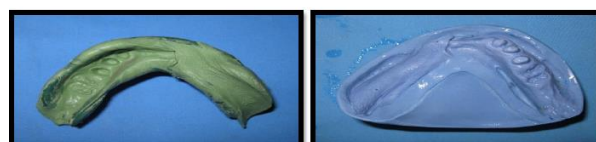


Fig 8: Teeth Preparation, Alginate impression,
Primary cast, Border moulding and final impression.



Fig 9: Two piece casting, Fixed component and
Removable component beads for acrylic retention.



Fig 10: Frame – Work Trial.



Fig 11: Teeth preparation done with relation to 14,15, Final impression, Temporization and Cemented Cantilever prosthesis.

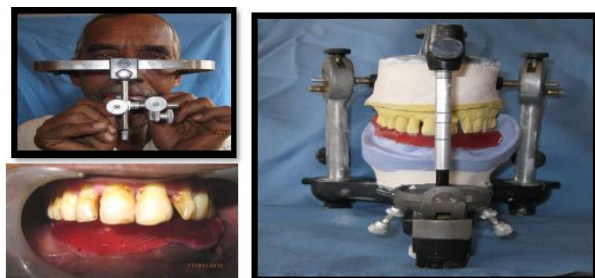


Fig 12: Face Bow recorded, jaw relation made and cast mounted.



Fig 13: Teeth Arrangement.



Fig 14: TRY IN –Frontal, Right lateral, Left Lateral and Occlusal view.



Fig 15: Esthetics Phonetics and Functional Verification, Final prosthesis.



Fig 16: PROTHESIS – Frontal, Right lateral and Left Lateral view.



Fig 17: Final Prosthesis.

DISCUSSION

Loss of mandibular continuity results in deviation of remaining mandibular segment toward the resected side primarily because of the loss of tissue involved in the surgical resection. It also causes rotation of mandibular occlusal plane inferiorly on the defect side. The pull of the suprahyoid muscles on the residual mandibular fragment causes inferior displacement and rotation around the fulcrum of the remaining condyle thus giving the tendency to an anterior open bite.[3] Greater the loss of tissue, greater will be the deviation of the mandible to the resected side, thus compromising the prognosis of the treatment.^{5,6} The techniques described to reduce mandibular deviation by restraining the patients neuromuscular system include exercise programs, removable partial denture prosthesis for dentulous patients and complete denture prosthesis for edentulous patients together with modification in the occlusal scheme to compensate for deviation.⁷

These days, the advanced maxillofacial medical procedure offers a wide scope of good outcomes with mandibular reconstruction after cancer removal. Be that as it may, the failure of grafts or delay in healing due to infection, compromised underlying host defense, and advanced age of the patient result in unpredictable functional outcome and poor facial profile.⁸ The objectives of prosthodontic treatment incorporate giving lip bolster, enhancing articulation, decreasing drooling and recapturing great esthetics.⁹ Scarred soft tissue, uninhibitedly mobile tissue, inadequate alveolar edge, high attachments of freni and loss of buccal and lingual sulcus in the mandibular region can complicate the prosthetic rehabilitation of a hemimandibulectomy patient.¹⁰ The unseating of the mandibular denture is more contrasted with the maxillary denture because of the one-sided draw of the muscles. A steady and retentive denture would enable the patient to prepare the remaining mandibular muscles to give a satisfactory impediment of the counterfeit teeth.¹¹ Treatment of hemimandibulectomy patients is multifold. The patient must be given right direction with respect to standard subsequent meet-ups, diet and sustenance and oral cleanliness. In the depicted case report, the rescued teeth were utilized as projections for overdentures as opposed to separating them. An overdenture can offer a few favorable

circumstances over a traditional complete denture particularly in a hemimandibulectomy circumstance. It gives better proprioception, maintenance, security and diminished alveolar bone resorption.¹²⁻¹⁴ Impression making can be trying with limited mouth openings which is normal in such patients. The patient ought to be prompted mouth opening activities. Last impressions must be made in custom plate. Fringe shaping and legitimate position of tissues is of embodiment. Jaw connection is variable with hemimandibulectomy patients. No articulator can duplicate the developments of a mandible with irregularity. A diminished vertical element of impediment and lower occlusal plane decline the torque produced to the mandibular denture and make it less demanding to control the mandibular denture. The one-sided draw of the unresected muscles makes it exceptionally hard to record the jaw connection. The patient ought not to be compelled to close the mandible yet rather should be approached to shut in an agreeable position with guided help. Centric relation record can't be genuinely repeatable however should be resolved to give solace and soundness of the denture to the patient.¹⁵ In the depicted case report, a hemimandibulectomy understanding was effectively restored by giving mandibular overdentures. This is an attractive treatment alternative as it is a basic, advantageous and practical technique for upgrading denture maintenance and steadiness; and giving security and solace to the patient.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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