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Rehabilitation of maxillary necrosis treated with hollow complete denture prosthesis: A Case Report

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Abstract: *This case report describes the prosthetic rehabilitation of maxillary necrosis patient with hollow denture prosthesis replacing the decayed tooth and missing hard and soft tissue area thus subsequently restoring esthetics and function.*

Keywords: *Hollow maxillary denture, Increased inter ridge distance, Necrosis, Prosthetic rehabilitation, severely resorbed ridge.*

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I. Introduction

The goal of prosthodontic rehabilitation entitles preservation of the remaining dentition and a long term maintenance care, thus ensuring the stability of the dentition and the prosthesis. This becomes crucial if a patient is systemically compromised with diabetes mellitus reporting with maxillary necrosis where the social, behavioral, and the functional needs are involved. This clinical report describes a case of necrotic maxillary alveolar ridge treated with hollow complete denture.

II. Case Report

A forty eight year old male (fig.1) reported to the department of prosthodontics, with a complaint of severely decayed tooth and bleeding from the gums. Dental history revealed very poor oral hygiene. A preliminary examination of maxillary arch revealed root stumps of 12, 13,14 and 15 which was decayed with gingival recession on 11 and periodontally involved 16, 21, 22, 23, 24,26 . Mandibular arch with teeth 31, 32, 33, 34, 35, 41, 42, 43, 44, 45, 46, 47. Periodontally all the teeth were affected. Mandibular teeth were stable. Gingival inflammation was observed on all teeth, deep probing pocket depth with sulcus bleeding index. Extraoral examination showed no significant finding. Radiographic examination revealed severe bone loss in the maxillary arch. Medical history revealed that the patient is diabetic. Because of compromised systemic state of patient and existing teeth; it was decided to make a hollow denture for the maxillary arch and to maintain the mandibular teeth.

III. Procedure

Treatment procedure was done in three phases:

3.1 Phase 1: Diagnostic impression and oral propylaxis was done first. It was planned to extract first quadrant with a use of a surgical stent. (fig.2)

3.2 Phase 2: After the healing of the extracted site the second quadrant extraction was done with mandibular teeth scaling and root planning. Patient was advised to maintain the oral hygiene. After the healing of the maxillary arch patient showed lack of upper lip support due to atrophic maxillary arch (fig.3 & 4)

3.3 Phase 3: Fabrication of the hollow denture for the maxillary arch. Primary impressions and final impressions were made in the conventional manner. Jaw relation was recorded and try in procedure was done.. The waxed denture was invested in a flask. The flask was heated for dewaxing procedure, opened, and the remaining wax was flushed out. Once the flask cooled, a 2 mm thick portion of base plate wax was adapted to the tissue surface of the master cast as well as the tooth side of the flask (fig.5). Avoid creating undercuts in the wax. The lower compartment of another similar flask was removed and placed on the counter portion of the original flask containing the teeth with wax adapted over them. Dental plaster was vibrated on the wax adapted in the counter portion of the original flask and in the alternate base of the flask. The flask was closed completely with the clamp. Similarly the upper compartment of alternate flask was placed on the counter portion of the original flask containing master cast on which wax is adapted and flasked using dental stone (fig.6). The

wax was boiled out, cleaned, and tin foil substitute applied as usual. Heat-cure, high-impact acrylic resin was then packed and processed (fig.7). The flasks were cooled and separated, and the flash was carefully removed. Both halves of the original flask contain a processed acrylic resin shell. The two halves of the flask were fitted together and any acrylic resin that interfered with complete flask closure was removed. A "rope" of doughy, heat-curing, high-impact acrylic resin approximately the diameter of a lead pencil was made. This acrylic resin rope was adapted around the border of the cured acrylic resin in the tooth side of the flasks. A plastic sheet was added, trial pack, the flask was removed, and packing was continued until no flaks were evident. The new acrylic resin was moistened slightly with monomer. The flask was closed, placed it in a curing press, and processed with a long-curing cycle. Cooled slowly and deflasked (cooling too quickly would cause more distortion than with a conventional denture). The denture was finished and polished. The denture was assessed by placing in a beaker full of water. (fig.8). The denture was inserted in the patient's mouth and instructions were given. (fig.9)

IV. Discussion

Rehabilitation of patient with severely resorbed maxillary arch and long lip length is a challenge to the prosthodontists. Even though, the choice of rehabilitation can be implant supported complete denture and ridge augmentation but many a times the patient who come with such a problem are patients with systemic illness, economic constraints posses reluctance for a long duration treatment procedure. Hence the best way to rehabilitate them is with the conventional way. Apart modifying the impression technique to get maximum denture bearing area, modifying the type off denture may be well accepted by the patient. The advantage of hollow denture are reduction in the excessive weight of the acrylic resin, resulting in the lighter prosthesis, decreasing the load on the residual alveolar ridge making the patient comfortable.

V. Conclusion

Hollow maxillary complete denture considerably reduces the weight of the prosthesis which in turn prevents transmission of detrimental forces which would otherwise be transmitted from a conventional heavy prosthesis to the underlying tissues. This ultimately results in increased retention and stability and up to some extend it is also possible to preserve the existing residual alveolar ridge.

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Fig 1: Extra Oral Pre Operative View

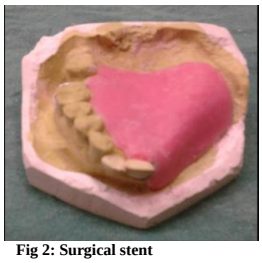

Fig 2: Surgical stent

Fig 3: Patient showing lack of upper lip support

Fig 4: Intra Oral View

Fig 5: Wax shim adapted

Fig 6: Counter Part poured

Fig 7: Individual sections

Fig 8: Floating denture

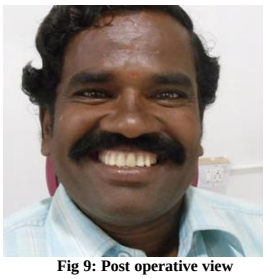

Fig 9: Post operative view

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