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CASE STUDY

PROSTHETIC REHABILITATION OF AN ECTODERMAL DYSPLASIA PATIENT WITH OVERDENTURE A CASE REPORT

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ABSTRACT

Ectodermal dysplasia relates to a group of inherited disorders where the ectodermal derivatives such as skin, sebaceous glands, hair, enamel and nails are malformed. Oligodontia or hypodontia along with abnormal shape of crown is a common dental feature of ectodermal dysplasia. There may be reduction in vertical dimension as alveolar process does not develop in absence of teeth along with varying degrees of xerostomia due to hypoplasia of salivary glands. Those cases of ectodermal dysplasia where oligodontia, abnormal shape of crown, reduced vertical height are the clinical challenges, neither removable nor fixed prosthesis is possible nor is conventional complete denture suitable. Telescopic crown with over denture can be a predictable treatment option in these cases.

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INTRODUCTION

Introduction: An overdenture is a prosthesis that covers and rests on one or more remaining natural teeth, the roots of natural teeth or dental implants. It has so many advantages compared to conventional complete and removable partial dentures. . The roots of the teeth offer best available support for occlusal forces. It increases patient's manipulative skill in handling the denture as periodontal membrane is preserved and there by proprioceptive impulses, part of myo-facial complex are retained. Support, stability and retention are improved. There is better patient acceptance, functionally as well as physiologically and as remaining teeth are preserved, no extraction is required. The cost affectivity is also cheaper than implants. This clinical report describes the fabrication of an overdenture with telescopic crowns to rehabilitate a patient with ectodermal dysplasia.

Case Report: A 35 years old patient of ectodermal dysplasia reported to the department of Prosthodontics of NBDC&H with complaint of inability to chew food properly since many years. He was also concerned about esthetics. Extra oral examination revealed decreased naso labial angle, nose –chin approximation, prominence of naso- labial furrow, loss of lip fullness ,loss of tonicity of muscles of facial expression, loss of hair, flabby facial appearance with an aged look (Figure 1&2). Intra oral examination revealed that the patient had oligodontia, only few permanent and deciduous teeth were present. 16 13 1122 27/36 47 & 55/85.27 55 & 85 were carious. Cervical abrasion was present on13 &22. 13 11 22 were proclined (Figure 3). Vertical dimension at occlusion was reduced. Radiological findings was corroborative of clinical and examination findings (Figure 4).

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Clinical Procedure

- **Step1:** Mouth preparation, extraction of retained deciduous teeth and restoration on carious and abraded teeth (Figure 9).
- **Step 2:** Tentative jaw relation was recorded.(Figure-5 & 6). Frontal and facial profile view was assessed after tentative jaw relation record (Figure 7 & 8).
- **Step 3:** Preparation in all present teeth was done for metal coping except in 16 and 26 where tooth reduction was done for metal crowns (Figure 10). Impression was taken with addition silicone impression material. Cast was poured with Type IV die stone and sent to laboratory for fabrication of metal copings and crowns.
- **Step 4:** Metal coping cementations were done in 13, 11,23,36,46 and metal crowns cemented in 16 and 26. (Figure 11, 12 &13) Final impressions were taken by rubber base with material. Telescopic crowns on 36 and 46 with mesial extensions were fabricated (Figure 14 & 15).
- **Step 5:** Temporary base plate of auto polymerizing acrylic resin was fabricated on the cast of upper arch

and covering the mesial extension of lower telescopic crowns in the lower arch. Wax rims were fabricated on the base plate covering the upper anterior copings. Jaw relation record was taken (Figure 16).

- **Step 6:** Clinical try in was done on patient's mouth following teeth setting (Figure-17, 18 & 19) and dentures were processed using standard laboratory techniques and delivered. (Figure 20,21, 22 & 23) The patient's smile showed his satisfaction upon insertion of the finished prosthesis (Figure 24, 25).

Figure 1. Pre-op Frontal view

Figure 2. Pre-op Profile view of patient patientpatient

Figure 3. Pre-operative Intra oral view of patient

Figure 4. OPG of the patient

Figure 5. Tentative jaw relation of patient

Figure 6. Tentative jaw relation of patient

Figure 7. Frontal view after increased vertical height

Figure 8: Lateral view of patient after VDO rise

Figure 9: Intraoral view after mouth prep

Figure 10: Tooth preps for crowns in lower arch

Figure 11. Metal copings cemented in upper arch and metal crowns cemented in lower arch

Figure 12. Metal copings cemented in upper arch and metal crowns cemented in lower arch

Figure 13. Intra oral view with metal copings in upper Arch and crowns in lower arch

Figure 14. Telescopic crows with mesial extensions in lower molars of both sides

Figure 15. Telescopic crows with mesial extensions in lower molars of both sides

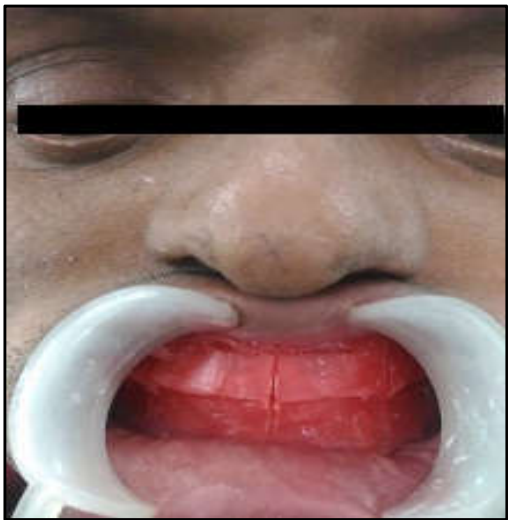

Figure 16. Final jaw relation record

Figure 17.

Figure 18.

Figure 19. Try in stage

Figure 20. Processed dentures inserted in mouth

Figure 221. Processed dentures inserted in mouth

Figure 22. Processed dentures inserted in mouth

Figure 23. Processed dentures inserted in mouth

Figure 24. Patient with the prosthesis inserted in mouth

Figure 25. Patient with the prosthesis inserted in mouth

DISCUSSION

Clinical examination revealed that patient was suffering from ectodermal dysplasia. Decreased vertical height, compromised esthetics and chewing inefficiency were the chief complain. Tentative jaw relation was re-established and recorded at desired vertical height. Telescopic crowns for the lower posterior teeth and metal crowns for upper posterior teeth were fabricated in this established vertical height. Metal copings were planned to protect the vitality of the teeth. In case of upper anteriors, copings were fabricated to alter the palato-axial inclination and to protect the vitality of the teeth. Temporary base plate was fabricated involving the telescopic crowns so that entire temporary denture can be inserted in the patient's mouth.

Conclusion

To restore this case of ectodermal dysplasia by unconventional method was a challenging task. Fabrication of conventional Removable partial denture and Fixed partial denture was not possible here due to reduced vertical height .Extraction of all remaining teeth followed by conventional Complete denture could be one of the treatment option, but ridge resorption would have been more faster. In this case lower ridge was resorbed, so conventional complete denture was not an appropriate option. When over denture can meet all the challenges efficiently, then fabrication of any other conventional prosthesis can be easily ruled out.

Conflict of interest: None

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