

# Prosthodontic Rehabilitation of a Patient with True Partial Anodontia – A Case Report

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*Congenital absence of teeth is a hereditary phenomenon passed through generations by an autosomal dominant pattern. Such a patient often presents with poor esthetics, mastication and disturbed social behavior. Here is a case of partial anodontia with agenesis of 15 teeth, which has been treated by providing maxillary complete overlay denture and mandibular overlay removable partial denture.*

**Keywords:** Agenesis, Overlay denture, Partial anodontia

True partial anodontia or oligodontia implies agenesis of one or more teeth [1–2]. According to Graber (1978) congenital absence of teeth is a hereditary phenomenon probably most often passed to each generation by an autosomal dominant pattern with incomplete penetrance [3]. The ultimate problems that set in due to partial anodontia are poor esthetics and function which in turn affect patient's psychosocial attitude. Here is a case of partial anodontia with agenesis of 15 teeth, which has been treated by providing maxillary complete overlay denture and mandibular overlay removable partial denture, a relatively conservative and reversible form of treatment [4–8].

## Case report

A 15-year-old female patient with poor financial background reported with the chief complaint of impaired esthetics, disturbed speech, and difficulty in chewing due to numerous missing teeth. Medical history of the patient was insignificant. However, her father and elder brother had congenitally missing teeth viz. lateral incisor and 2nd premolar.

The extraoral examination revealed that hair and skin were normal, lips protuberant and maxilla was underdeveloped as compared to mandible (Figs. 1 and 2). Vertical dimension of occlusion was also reduced as evident by facial features and phonetics. Intraoral clinical examination revealed low palatal vault, knife edged alveolar ridges, anterior open bite and small sized teeth (Fig. 3). Maxillary arch presented six retained deciduous teeth (canines and 1st and 2nd molars) and six permanent teeth (central incisors, 1st and 2nd molars bilaterally). In the mandibular arch seven permanent teeth (central incisors, left lateral incisor and 1st and 2nd molars) were present. Mandibular left permanent 1st molar and maxillary deciduous 1st molars were carious broken. No other permanent successors were evident in the full mouth intra oral periapical (IOPA) radiograph.

Diagnostic impressions were made with alginate impression material (Vignette; Dentsply India Pvt. Ltd, Gurgaon, Haryana) and poured in dental stone (Kalstone; Kalabhai Karson Pvt. Ltd, Mumbai). The diagnostic casts were then articulated in semiadjustable articulator (Hanau H2 Teledyne Waterpik Ft. Collins) using face bow and centric relation records. An interim soft splint (3A medes, Easy-vac Gasket, Gyeonggido, Korea) of 3 mm thickness was fabricated to ascertain the adaptability of the patient to an increased vertical before insertion of the definitive prosthesis. The patient was instructed to wear the prosthesis for 3 months. By that time, the mandibular left permanent 1st molar and maxillary deciduous 1st molars

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**Fig. 1** Preoperative lateral profile



**Fig. 2** Preoperative frontal profile



**Fig. 3** Preoperative intra oral view

were extracted. It was determined that the patient could tolerate the new vertical dimension of occlusion (VDO). New diagnostic casts were obtained and surveyed. Slight enameloplasty of some teeth was performed to remove unfavorable undercuts and to create a favorable line of

draw. Special trays were fabricated with tray material (Tray resin; Dentsply, New York, PA). Border moulding was performed on the custom tray with polyether impression material (Impregnum soft; 3M ESPE AG Seefeld, Germany) and secondary impressions were made in the same. Master casts were retrieved using dental stone. After recording jaw relation, casts were mounted on semi adjustable articulator (Hanau H2 Teledyne Waterpik Ft.Collins) using face bow. Artificial teeth were positioned for esthetic and function. Try in was performed and removable complete maxillary overlay denture and removable mandibular partial overlay prosthesis (covering central incisors, left lateral incisor) were fabricated (Lucitone 199; Dentsply, New York, PA). Following the insertion of overlay dentures, patient's facial esthetics changed remarkably (Fig. 4). Recall check-ups were scheduled for 1 year to make necessary adjustments and monitor the patient's oral hygiene.



**Fig. 4** Postoperative frontal profile

## Conclusion

This clinical report demonstrates that treatment with overlay denture, a reversible, relatively inexpensive and conservative method, may be used in the treatment of partial anodontia patients with limited finances. In this case, treatment resulted in an improvement of esthetics and function that caused a favorable change in the psychology of the patient and instilled confidence in her.

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