



## **RIDGE GRIP ESTHETIC PROSTHESIS: AN ALTERNATIVE CONVENTIONAL REMOVABLE PARTIAL DENTURE- A CASE REPORT**

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### **ABSTRACT**

Conventional fixed partial dentures, implant supported Fixed Partial Dentures (FDPs) and removable partial dentures are the most common treatment modalities for the aesthetic and functional rehabilitation of partially edentulous patients. Each method has its particular pluses and minuses, which should be carefully considered. There are also several varieties of dentures available to address specific issues, from partial dentures to implant-supported overdentures. The best option will depend on our individual situation. In our clinical practice we come across many patients who present with different contour and forms of residual ridges that may range from severely resorbed to well-formed bulky ridges. This article presents a case in which satisfactory esthetics result was obtained by flangeless Ridge grip esthetic partial denture which is fitted directly on to the ridge of the upper anterior teeth.

### **INTRODUCTION**

Restoration of the lost or missing tooth/teeth is one of the challenging tasks for a clinician among the various possible treatment modalities. The optimum restoration should fulfill the basic requirements of any prosthesis. Fabrication of Partial denture in patient can be a challenge when the intra oral conditions are less than ideal. Some abnormal conditions that exist in the partially edentulous patient can be corrected surgically, prior to construction of dentures, to enable the patient to function more successfully following prosthetic restoration. Overall goal of reconstructive preprosthetic surgery is to provide an environment for prosthesis that would restore function, be stable, aid retention, preserve associated structures and satisfy esthetics. However use of surgical

aid is not always possible [1]. The major obstacle for preprosthetic surgery is getting patients consent. Patient has to be made aware that the surgical procedure will be helpful for future denture wearing. This is not always possible as many patients are not comfortable with idea of surgery. One such clinical condition which may pose a problem in denture insertion and may even affect the denture esthetics irrespective of resorption, maxillary overdevelopment, this could be developmental in origin or pathological and could be exaggerated by minimum bony resorption. Excessively prominent ridge is more commonly seen in maxilla than in mandible. Arrangement of artificial teeth in these cases pose esthetic problem as the placement of denture labial flange over the already overdeveloped maxilla, pushes the upper lip out giving a swollen lip appearance [2]. The only alternative is to fabricate a flangeless Ridge grip esthetic prosthesis in maxillary anterior region, which is a non-surgical procedure in order to improve denture esthetics in a patient with labially inclined maxilla and an

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accompanying severe labial undercut resulting in excessive fullness of lips on wearing such flanged denture.

### Ridge Grip Esthetic Prosthesis:

Full or partial dentures without labial flange/gum-colored base made of plastic resin, which fits over the remaining alveolar (bone) ridge that formerly held the teeth. The prosthetic teeth projecting from the palatal base are designed to look and function just like your natural teeth. Dentures are held in place primarily by the suctioning effect of their close fit against the alveolar ridges — that's why it's so important that they are fitted properly. The upper denture also gets extra support from the large surface area of the roof of the mouth (palate), which generally makes it extremely stable [3-5].

### CASE REPORT

A 40 year old male patient reported to the Department of Prosthodontics, Tagore Dental College and Hospital, Chennai, requesting fabrication of removable type of prosthesis, as the affordability for fixed prosthesis was not possible at this time. The patient revealed that he was very unsatisfied with the appearance of his present denture and he wanted to get it corrected. The patient was partially edentulous for two years. On extra oral examination the patient had normal muscle tone and normal lip length. On clinical examination and analysis of the mounted diagnostic models, the patient exhibited missing Central and lateral incisors, right and left first molars, right second premolars in upper jaw (Kennedy's class III modification II), Central and lateral incisors, in lower jaw (Kennedy's class IV). A detailed examination revealed oral hygiene was satisfactory and had periodontal pocket depths under 3mm in all remaining teeth. Gingival recession seen on left second maxillary premolar, generalized stains and attrition noted in all remaining teeth. Patient had labially inclined premaxilla and an accompanying severe labial undercut (Fig.1). Patient was not willing for any surgical procedure hence alveoloplasty followed by fabrication of dentures had to be ruled out.

Keeping patient's demand into consideration it was decided to use a non-surgical treatment option of fabricating new set of denture with modified labial flanges.

### CLINICAL PROCEDURES

Maxillary and mandibular arch impressions were made using alginate (Tulip Alginate Impression Material, Cavex, Holland Bv, Haarlem Holland). Cast was poured using dental stone (Ultrarock, Kalabhai Karson Pvt Ltd, Mumbai, India). The casts are mounted in three point mean value articulator. Diagnostic models were analyzed and were surveyed. Denture base were fabricated by self-cure acrylic resin (Autopolymerizing acrylic resin, ALIKE™; GC America, ALSIP, USA) Mock wax up was done on the diagnostic models. For the maxillary rim labial flange was trimmed and occlusal rims were made. Vertical and horizontal bite registrations were recorded. Teeth were set in accordance with esthetic guidelines and try-in was done. The denture was then invested and processed in conventional manner. After deflasking the denture, a window was formed on the labial aspect of the upper ridges in the area of prominence. At all other places the denture covered the underlying tissue similar to that by a conventional denture. Since there was no denture base in the area of prominence, the lips and the peri-oral tissues were in direct contact with the ridge which reduced the fullness of the lips. The border areas were kept sufficiently thick such that they had adequate strength and at the same time they did not affect esthetics. The denture was polished and tried for retention and stability in the patient's mouth (Fig 2). Upper and lower complete denture were delivered after occlusal adjustments. Patient was recalled after 1 day, 1 week and 1 month for the regular post insertion visits. Patient did not complain of any significant post insertion problem with the new set of denture. Three months follow-up, the patient had provided evidence of better face profile and he reported superior masticatory efficiency.

**Figure 1. Intraoral photographs of the existing prosthesis in the maxillary arch. Frontal and lateral view**



**Figure 2. Intraoral photographs of the Flangeless ridge grip esthetic prosthesis in the maxillary arch. Frontal and lateral view**



## DISCUSSION

The procedure explained rehabilitation of this patient in an alternative way of restoration of partially edentulous arches with increased masticatory efficiency. After clinical examination it was revealed that the major cause of unesthetic appearance is labially inclined premaxilla and the accompanying undercut in maxillary ridge it was difficult to obtain a single path of insertion. Also this led to excessive fullness on wearing the denture. If the labial flange had to be given, it would necessitate excessive anterior block out, in turn resulting in excessively bulky anterior flange. Further the flange would have interfered in esthetic and phonetics. Since the patient did not want any surgical procedure, modification of the labial flanges of the maxillary denture was

contemplated, so an anterior flangeless Ridge grip esthetic Prosthesis was planned. Another modification of this gum fit or flangeless denture is wing denture in which the labial flange is sectioned in the labial frenum region [6-9].

## CONCLUSION

The flangeless Ridge grip esthetic removable partial denture exhibited with better emergence profile than the conventional removable partial denture with buccal acrylic flange. The technique followed in the treatment of this patient is simple but yet effective treatment plan for an individual. This denture has got various advantages since many tedious laboratory steps were eliminated but provided better emergence profile and superior masticatory efficiency.

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