

# Partial Veneer Retained Fixed Partial Denture In Conjunction With Cantilevered Bridge To Fulfill The Objective Of Patient Perceived Aesthetics.

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## ABSTRACT

For some patients, self-image can be deceptive from a scientific point of view, but they don't care as long as what they perceive about themselves is fulfilled in one way or the other. Prosthodontic treatment is one field that suffers at the hand of such patients, because for every different situation the prosthodontist provides multiple treatment options among which a patient can choose. A female patient, reported to correct her impaired dental aesthetics (loss of maxillary lateral incisor) while the partial edentulous situation being a Kennedy class 1 modified 2. Occlusal evaluation permitted the rehabilitation of maxillary arch with a three unit fixed partial denture with a partial veneer crown as a retainer in one modification space and a cantilever bridge in the other. Absolute indication of such prosthesis is discussed.

**Keywords:** Fixed partial denture, resin bonded prosthesis, metal, ceramic, occlusion, crown length.

## INTRODUCTION

Balancing scientific principles with patients' needs is not an easy task. Most of the patients from low income countries judge treatment options in terms of affordable finance, which is why many patients do not worry about the way their doctors think about their well being. This applies more in the field of Prosthodontics where multiple treatment options are provided to the patient out of which he selects what suits him. Without being critical there are times when the dentist, he finds that the treatment, the patient chose over his choice was in fact beneficial for him. In the field of fixed Prosthodontics, many dentists hesitate to explore treatment options like use of partial veneer as a retainer and cantilever as pontic. The cantilever is avoided more because it is supported only at one end by one or more abutments.<sup>[1]</sup> Short cantilever prosthesis has been used extensively without regard to biologic and material limitations, which have resulted in early tooth loss and tissue damage.<sup>[2-6]</sup>

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This has developed an apprehension in the mind of Prosthodontists about such treatment option which is actually not the case. Cantilever fixed partial denture is a treatment option that is indicated in situations provided one understands that particular situation as well.

This article in the form of case report presents a case where cantilever prosthesis was chosen as a treatment option because the situation was well understood and success with such option was guaranteed.

## CASE REPORT

A female patient aged 43 years reported to the post graduate section of the department of prosthodontics with a chief complaint concerning the aesthetics of her upper front teeth. Medical, social, drug, diet and dental history were non contributory except patient had multiple missing teeth mainly due to caries indicating poor oral hygiene maintenance. Extra oral examination disclosed normal features while intra orally the patient presented a Kennedy class 1 modification 2 partial edentulous arch in the maxilla while having a Kennedy class 2 partial edentulous arch in the mandible [Figure 1a]. Diagnostic impressions were made with irreversible hydrocolloid (CA 37; Cavex, Haarlem, Holland) followed by a diagnostic

mounting on a Hanau Widevue semi adjustable articulator (Waterpik, Ft Collins, CO, USA) that was programmed as per patients' generated records using various interocclusal records (O-Bite, DMG-Germany). Occlusal analysis was done and various treatment options were presented that included a cast partial denture for both arches, a combination of cast partial denture and fixed partial denture for maxillary arch and a combination of interim partial and fixed partial for maxillary arch. Because of economic and time restraints the patient consented the option of fixed partial denture and interim partial denture.



**Figure 1:** (a) High lip line demonstrating excess incisal exposure (b) Tooth preparation (c) Occlusal space after tooth preparation (d) Tooth preparation for fixed partial denture (e) Wax up (f) Metal trial.



The design of fixed partial denture included a three unit fixed partial denture with partial veneer retainer for maxillary right side and a two unit cantilever prosthesis for left side. Both designs were chosen based on occlusal analysis of the existing dentition. 7 After oral hygiene maintenance program, prosthodontic treatment was started by preparing for respective restorations [Figure 1b-d]. A wax up was done for both partial dentures (Fig.1e) which was followed up by metal trial [Figure 1f]. After porcelain was fired, both fixed partial dentures were cemented using zinc phosphate cement (Harvard) for full retainer and

glass ionomer cement for a partial veneer retainer [Figure 2a,b]. An interim partial denture was fabricated after cementing fixed partial denture [Figure 2c]. The patient was given instructions regarding oral hygiene maintenance. The patient was satisfied with the esthetic outcome of fixed partial denture.

## DISCUSSION

Cantilever design as a fixed partial denture has risks associated with it that ranges from periodontal destruction of the abutment tooth to cementation failure of the retainer.<sup>[8-10]</sup> But many have successfully managed the risks through one of the most determining factors for success in such cases that is the occlusion in its dynamic form.<sup>[7,10]</sup> Factors of occlusion that determined the choice of cantilever prosthesis on the left side were as follows: (1) simultaneous restoration of canine on the opposite side which allowed the clinician to alter the anterior guidance so that the cantilever lateral incisor was free from detrimental stress in protrusion and lateral excursion (2) opposing mandibular canine already worn out thus reducing the possibility of touching the cantilevered portion in centric and eccentric movements (3) the health of the abutment (canine) which had long crown length and long roots (4) no evidence of gingival and periodontal disease in the abutment that supported the cantilever. All these factors, especially the chance to modify canine guidance on the other side made cantilever indication an easy choice. Other modifications done included reduction of the incisal table for lateral incisor, which resulted in minimal functional contact with opposing teeth.

The choice of using a partial veneer crown as a retainer for the fixed partial denture on the right side was based on predominantly to use the natural tooth as facing thus accomplishing natural aesthetics. One of the problems with such design is non burnishability of base metal alloys and better marginal adaptation is achieved only with gold based alloys.

## CONCLUSION

The use of cantilever prosthesis should be done judiciously after evaluation of opposing occlusion and all components of forces should be visualized in advance to predict the long term outcome.

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