Mandibular kennedy class III cast partial denture still a choice: A case report

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ABSTRACT

Prosthetic rehabilitation in case of partially edentulism patient should be planned after a complete evaluation of the patient’s cooperation regarding recall system, oral hygiene maintenance, plaque index, brushing frequency, periodontal status, caries susceptibility, economic and education status. In order to get a patient’s satisfactory prognosis, we can also overlook some extensive and expensive procedures like implants and move towards simpler and low-cost treatment like removable partial dentures.

Keywords— Cast partial dentures, Implants, Fixed bridges

1. INTRODUCTION

Cast partial dentures (CPD) for partially edentulism is a challenging task for the dentist when the whole of the world is inclined towards implants and implant-supported prosthesis. Cast partial dentures are still a choice for the patients who want a replacement of teeth for esthetic and functional purpose and cannot go for fixed restoration. Each and every single patient have different treatment options as it varies with patient’s demand, medical history, age and related debilitating diseases, patient’s attitude toward maintenance of prosthesis, the cause of tooth loss either caries, periodontitis, or trauma, past dental experience and financial condition. In a developing country like India, many of the patients are still unaware of dental diseases and don’t undergo any dental treatment because of less awareness and poverty. Conventional removable method of replacing teeth is the treatment of choice in cancer patients who have lost all his hopes. So here our main aim is to rehabilitate the patient with conventional prosthesis not going for an advanced procedure like implant which is now the treatment of choice for the developed country’s so that poor and old illiterate patients can also have a normal quality of life. [5]. The prosthodontics should meet all these objectives and select a treatment plan according to the patient’s overall evaluation and try to achieve a goal to treat a maximum number of the patient.

2. A CASE REPORT

A female patient of age 44 years is a school teacher comes to prosthodontics department, faculty of dental sciences, BHU, with a chief complaint of multiple missing teeth in a lower arch with difficulty in chewing.

Medical history was insignificant. During the extra-oral examination, TMJ, lymph nodes, facial muscles were all normal and face was symmetrical.

On intra oral examination 35, 36, 37, and 46 missing. Poor oral hygiene and had high plaque index. Brushing once a day. Attrition was not significant. For the radiographic investigation, IOPA and OPG were done.

The patient has been informed about all treatment options and their all pros and cons and prices related to her oral status. The patient was agreed for CPD.

The diagnostic impressions were made with irreversible hydrocolloids (Dentsply, Zelgan 2002 alginate). Diagnostic model with (Kulzer moldastone high strength) powder was poured. Centric relation bite recorded. Model mounted on a 3-pin articulator. Another cast poured with orthokal (plaster) for primary surveying.

3. STEPS USED DURING SURVEYING

- Tripoding did for accurately placing cast during secondary surveying.
- The height of contour (HOC) marked on adjacent abutments for clasp assembly.
- Guiding plane analyzed
- Undercut depth measured
- Rest seat prepared on 38, 34, 45, and 47 (red pencil)
- Designing major, minor connectors.

INTRODUCTION

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In Kennedy class III there is a quadripod design which is very stable and simple among all cast partial dentures. Simple circlet retentive clasp design lies below the height of contour (HOC) on both adjacent abutment and reciprocal arm above the HOC.

The lingual bar was planned due to an adequate depth of lingual sulcus.

In patient’s next visit mouth preparation was done and final impression was made with polyvinyl siloxane impression material (GC, flexceed putty with the light body) and cast poured with die stone.

Secondary surveying was done and wax pattern fabrication for designing the framework, casting done and finally bite block prepared. (Figure 1)

![Image 1: Bite block prepared](image1)
![Image 2: Teeth arrangement](image2)

F ig. 1: Bite block prepared
Fig. 2: Teeth arrangement

Again in the next visit of patient’s bite was recorded, teeth setting done. Cusp fossa relationship maintained during teeth setting. And try in was done to check for esthetic and function (Figure 2, 3). Cast partial denture was acrylised and delivered. The patient was very much satisfied as it had increased the patient’s confidence, function and overall quality of life.

Post denture installation instructions were given and advice for regular follow up.

![Image 3(a), (b): Try in after teeth setting](image3)

Fig. 3 (a), (b): Try in after teeth setting

![Image 4: After acrylisation](image4)

Fig. 4: After acrylisation
4. DISCUSSION

Cast partial denture is a substitute to replace multiple missing teeth, oral function, esthetics, and overall health of the patient. In partially edentulous cases we get a couple of options like a conventional fixed partial denture, cast partial denture, precision attachment, and implant-supported prosthesis.

In this case, the patient was not much cooperative and was not ready for regular follow up which is expected in implant prosthetics and present with poor oral hygiene and poor periodontal status which is ultimately a risk factor for failure of the implant and conventional FPD. So our aim to rehabilitate the patient with removable cast partial. The patient was also not ready for the surgical procedure because of the high cost of the treatment. [6, 7]

Conventional FPD was not planned because abutment preparation sound tooth structure needs to be sacrificed which is irreversible. With conventional FPD prepared abutments are more susceptible for caries, endodontic and periodontal problem.[8-10]

Our main aim was to preserve the remaining dental arch. Prosthetic treatment can’t be planned without the functional benefit and evaluation of long-term outcome. Cast partial is a treatment choice here. The patient can easily use it, clean and maintain it. Cross arch stabilization achieved due to quadripal design and guiding planes. Removable partial dentures impart undue force to natural abutments which can be minimized by selecting, proper framework design of CPD which distribute the forces to give maximum stability and support. Wearing of removable partial dentures do not have a deleterious effect on periodontium if good oral hygiene is maintained. [1-4]. Favorable clasp flexibility and design aid in the distribution of horizontal forces.

In studies, stress distribution in kennedy class III is only over abutment teeth. It exhibits limited movement under the influence of a functional force. So we try to also convert distal extension cases kennedy class I and II into class III by placing distal most implant to enhance support.

5. CONCLUSION

The outcome of the prosthetic treatment plan is determined by several factors like general and oral health of the patient, the degree of cooperation, the patient’s need and demand, economic status, and prosthodontics knowledge and decision making in prothestic dentistry.

6. REFERENCES