

Rehabilitation of Partially Edentulous Patients with Cast Partial Denture: A Case Report

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ABSTRACT

Tooth loss is a physiological and pathophysiological process which may lead to edentulism in patients. Rehabilitation in partially edentulous patient can be challenging in Kennedys Class I and Class II situations¹. In a survey in South India, Kennedys Class III situation is more prevalent in middle age group. In such situation, fixed partial denture is not advised because of absence of distal abutment. Also fixed prosthesis has some limitations like good abutment tooth, short span bridges. Hence, implant and removable partial denture can be planned. But in some situation, because of more bone loss and uncontrolled systemic diseases, implant is contraindicated. Acrylic partial denture or Cast partial denture is the treatment of choice for such patients.

Key words: Cast partial denture (CPD), Partially edentulous patients, Removable partial denture

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INTRODUCTION

Toothloss is a physiological and pathophysiological process which may led to edentulism in patients. Rehabilitation in partially edentulous patient can be challenging in Kennedys Class I and Class II situations [1]. In a survey in South India, Kennedys Class III situation is more prevalent in middle age group [2]. In such situation, fixed partial denture is not advised because of absence of distal abutment. Also fixed prosthesis has some limitations like good abutment tooth, short span bridges [3-6]. Hence, implant and removable partial denture can be planned. But in some situation, because of more bone loss and uncontrolled systemic diseases, implant is contraindicated. Acrylic partial denture or Cast partial denture is the treatment of choice for such patients. Cast partial denture is composed of retainer and precision attachment [7]. Cast partial denture is preferred over acrylic denture base because of its accuracy, durability, resistance to distortion, inherent cleanliness, reduced

bulk [1,8]. There are also some of the contraindications of CPDs which includes intolerance of major connectors and patients with psychiatric disorders or repeated loss of consciousness, also there is plaque accumulation, increase risk of caries and periodontal diseases. With the proper planning of the designs, this can be overcome [9,10]. In this case report, partially edentulous patient with Kennedys Class III is restored with cast partial denture.

CASE REPORT

A 52 year old male patient reported to the department with the chief complaint of missing teeth in the lower back region of the jaw since 1 year. On examination, missing teeth with 35, 36, 37,, 46, 47 and attrition with lower anterior region were present. Metal prosthesis



Figure 1A: Intraoral photograph for maxillary arch.

with 26, 27, 28 and metal ceramic prosthesis with 11, 12, 21, 27 were present (Figure 1A and Figure 1B).

Various treatment plan was discussed with the patient but as per the financial constraints of the patient root canal treatment and Metal ceramic Prosthesis with 31, 32, 33, 34, 35, 36, 41, 42, 43, 44 followed by cast partial denture replacing 35, 36, 45, 46, 47 was planned. Diagnostic impression and diagnostic mounting was done. Surveying was done (Figure 2) and cast partial denture was designed. Root canal treatment was done with lower anterior region. Occlusal rest seat preparation with 38, 48, 45, and 34 and guiding plane with 38 and 48 were planned.

Tooth preparation and gingival retraction was done followed by impression with elastomeric impression material (Figures 3A to Figure 3C). Wax up was done and casted. The metal try in having rest seat with 45 and 34

was checked in the patient's mouth for fit and accuracy of the crown (Figure 4A and Figure 4B). The PFM crown was fabricated (Figure 5). The PFM crowns were cemented and the necessary mouth preparations were done in the patient's mouth and impression was taken (Figure 6). The metal framework for cast partial denture was then checked in the patient's mouth for stability and fit (Figure 7). The jaw relations were done (Figure 8) and try in was checked (Figure 9). The trial denture was



Figure 1B: Intraoral photograph for mandibular arch.



Figure 3B: Tooth preparation with 11, 12, 13, 14, 15, 21, 22, 23, 24 and gingival retraction.



Figure 2: Surveying of diagnostic cast.

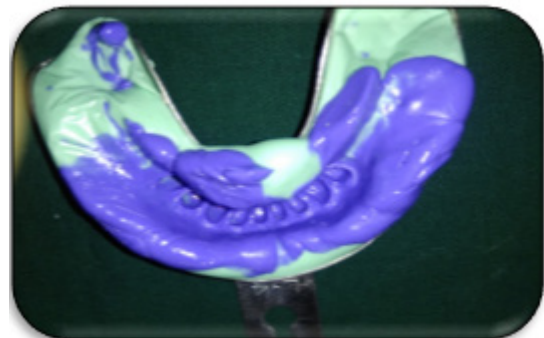


Figure 3C: Impression with mandibular arch.

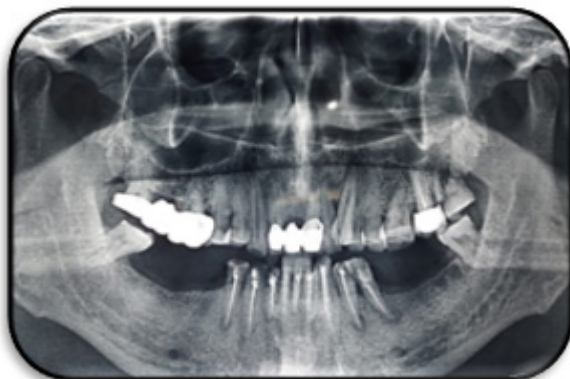


Figure 3A: After endodontic treatment.



Figure 4A: Metal try in.



Figure 4B: Metal try in showing rest seat with 45 and 34.

then sent for acrylisation and finished denture was then delivered to the patient (Figures 10A and Figure 10B).



Figure 5: Clinical photograph showing cementation of crowns.



Figure 6: Impression with the mandibular arch.



Figure 7A: wax pattern of the framework on.



Figure 7B: Cast metal framework on the cast.



Figure 7C: Cast metal framework in the patients mouth.



Figure 8: Jaw relations were done.



Figure 9A: Trial in of the cast metal framework.



Figure 9B: Trial in of the cast metal framework.



Figure 10A: Cast partial denture framework.



Figure 10B: Denture insertion.

DISCUSSION

In partially edentulous patients, there are various treatment options. Based on various diagnostic factors and patients conditions, the best treatment plan is planned for the patients. Nowadays, because of the

introduction of various techniques like CAD-CAM, precision milled and semi-precision attachments, improved impression materials, improved techniques and designs, the best treatment can be given to the patients [11]. In removable partial denture, primary retention is mainly accomplished mechanically by placing retaining element on the abutment teeth whereas Secondary retention is provided by the intimate relationship of the denture bases and major connector with the underlying tissue. Stability is best achieved by the cast circumferential clasps because of rigid shoulder. Wrought wire clasps is there which provide flexible shoulder [12,13] and bar clasps do not have a shoulder hence, they offer a lower stability in removable partial denture [12]. Lack of stability is a major problem faced by most of the patients leading to poor chewing ability [13]. CPD are strong, rigid have good stability and hence it is preferred.

CONCLUSION

With this case report it was concluded that Cast partial denture can be serves as a better prosthesis in terms of retention, stability, masticatory efficiency, comfort and periodontal health of abutment if there is adequate maintenance of oral and denture hygiene was done at a regular interval.

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