



## Use of cast post core as foundation restoration in a patient with chronic depression

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### Abstract

*Depression in young female subjects is mostly associated with marital issues. Treatment in such cases is a mild antipsychotic drug which it has its adverse effects on the human body. An anterior maxillary tooth that has undergone gross decay reflects negligence whose underlying cause can be either pathological or physiological. We present a case of a young female patient known to be suffering from chronic depression and presently taking medication (carbamazepine) with a chief complaint of missing maxillary lateral incisors. A custom made cast post core was given in relation to maxillary left central incisor as part of a foundation restoration for the overlying fixed partial denture. Two individual fixed partial dentures were fabricated to restore the Kennedy class 3 modification 1 partial edentulous spaces. A consistent, persistent, patient education and motivation program were used to ensure overcoming the ill effects of chronic depression and the side effects of xerostomia.*

**Keywords:** xerostomia, carbamazepine, fixed partial denture, porcelain, endodontic.

### Introduction

Grossly decayed (cariou) anterior tooth signifies negligence in personal care by an individual unless the individual is suffering from some underlying medical condition. Patients suffering from depression have been shown to have a significantly negative effect on their self care ability.<sup>1</sup> Dental treatment in such cases is usually complex<sup>2</sup> that may range in the form of a single or multiple post core crown,<sup>3,4</sup> and/or a single unit or multiple units cast post cores.<sup>5</sup> the choice of the type of cast post core depends on a number of clinical factors most of which are directly dependant on the amount of natural tooth structure that will be present after

caries removal and tooth preparation.<sup>6,7</sup> The use of cast post cores in grossly decayed teeth has never been a subject of contradictions since it is widely accepted that cast post core crowns provide excellent opportunities of saving the roots of the natural tooth. They also provide an opportunity to allow morphological changes to a restoration that is not dependant on the axial inclination of the root or the natural tooth.<sup>8</sup> Careless patients either naturally or pathologically require modifications in fixed partial denture designs as well as amount of patient education and motivation.

This article presents a case of a young adult female patient suffering from active depression who

received a cast post core foundation restoration as part of her pre prosthetic mouth preparation, which enabled her to enjoy the advantages of a fixed prosthesis rather than a removable prosthesis.

### Case Report

A young female patient aged 33 years, reported to the department of prosthodontics for correction of her facial esthetics which was grossly impaired by loss of maxillary front teeth. The patient also complained about her inability to identify shapes of food stuff during eating. Patients social history revealed that she has worked as a teacher since last 8 years in a government school and was unmarried. Medical history disclosed that the patient had developed a bout of depression 14 months back for which she was currently under treatment. The patient used to take a daily medication in the form of carbamazepine (50mg) and multivitamin B complex as advised by her physician. Dental history revealed extraction of maxillary front teeth 10 months back. Extra oral examination revealed a high lip line, thin maxillary lip, increased lip mobility, decreased maxillary lip length relative to mandibular lip and the presence of hair growth around the maxillary lip (**Fig 1A**).



**Figure 1: (a) Extra oral view (b) Intra oral view showing grossly decayed prospective abutment (c) and (d) indirect technique of cast post core fabrication (e) cast post core cementation (f) two individual porcelain fused to metal fixed partial denture**

Intra oral examination revealed a Kennedy class 3 modification 1 partial edentulous space (both maxillary lateral incisors missing) in the maxillary anterior arch with grossly decayed maxillary left central incisor (**Fig 1B**). Other intra oral clinical picture was of a dominant generalized presence of dental plaque and generalized gingivitis with localized periodontitis.

Various treatment options that were presented to the patient included a pre prosthetic mouth preparation (oral hygiene maintenance program, removal of caries, endodontic treatment of 21 and cast post core foundation restoration of 21). This was followed by a second phase of the restorative treatment that ranged from single implant supported prosthesis for missing maxillary lateral incisor (subject to physician's consent), a three unit fixed partial denture on either side to replace missing maxillary lateral incisors or an interim partial denture. The patient consented to pre prosthetic mouth preparation treatment followed by a fixed partial denture fabrication for missing lateral incisors. The fabrication of a cast post core was considered to be essential for a grossly decayed maxillary left lateral incisor. The cast post core was fabricated using an indirect technique (**Fig 1 C, D**) where the custom cast post core was fabricated on a working cast made of high strength die stone (Ultrarock, Kalabhai Dental, India). The cast post core was cemented in place using zinc phosphate cement (Harvard, Germany) (**Fig 1 E**).<sup>9</sup>

Routine clinical and laboratory procedures were employed to fabricate two three unit porcelain fused to metal fixed fixed partial dentures in relation to missing maxillary lateral incisors. Both fixed partial dentures were cemented in place and the patient was educated about the importance of maintaining oral hygiene as part of long term care of the prosthesis. The patient was put on more than frequent follow up visits and at each visit patient education about prosthetic care was reiterated to her. On one of the early follow up visits the patient exclaimed her satisfaction with the treatment outcome (**Fig 1 F**) and improvement in her smile.

### Discussion

Occlusal rehabilitation of a case of a female patient suffering from chronic depression and presently on the drug carbamazepine has been described in this case report. The unique feature of the case being patients complains of problem in oral stereognosis and systematic occlusal rehabilitation of the patient with emphasis on continuous patient education during follow up visits. Presence of natural teeth play a major role in oral stereognosis and studies in completely edentulous patients has shown to decrease with removal of teeth.<sup>10</sup> The use of cast post core as a foundation restoration has been done since the last two centuries. There is no doubt that post core is an essential option for saving a tooth. However, there are different opinions regarding the use of a prefabricated or a custom made post core crowns.<sup>11</sup> The fabrication of a cast post core is not only complex, but instances of iatrogenic have also been reported during such clinical procedures.<sup>12</sup> The case presented in this article had three major complexities, which in the order were active chronic depression, existing antipsychotic medication intake and multiple cast restorations (post core and fixed partial denture). One cannot expect the same patient compliance from a patient who is actively depressed as compared to a normal patient. Therefore, in such cases, it is imperative to enforce patient education materials repeatedly and efficiently. Post follow up visits are increased and at each appointment patient education material is revisited by both patient and dentist to ensure proper maintenance. Another important dental finding in patients using carbamazepine is the side effects associated with it.<sup>13</sup> Xerostomia is a significant risk factor for development of secondary caries around a fixed restoration. This demands careful patient education who has received multiple fixed partial dentures.

### Conclusion

Cast post core provides flexibility in designs and also helps save a grossly decayed tooth. The presence of chronic depression and consumption of carbamazepine does not contraindicate fixed

restorations rather it indicates more stress on patient education and motivation.

### Acknowledgements

The authors would like to acknowledge the staff of the department of periodontics and endodontics for their valued support during treatment of this case.

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