

# A Clinical Survey to evaluate Postinsertion Problems of Patients wearing Complete Dentures

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## ABSTRACT

**Introduction:** Edentulism is the result of tooth loss which compromises quality of a patient by yielding poor health. For such patients, removable complete denture is one of the options among various treatment modalities and patient satisfaction becomes a more important determinant in the prognosis of complete denture therapy. After denture insertion, patients may experience difficulty in wearing complete denture and many patients may not be aware of limited efficiency of complete dentures. The present study aimed to assess most common reasons of postinsertion denture problems and its frequency among conventional complete dentures (CCDs) and biofunctional prosthetic system (BPS) dentures.

**Materials and methods:** This study was carried out on 92 patients grouped into two, wearing CCDs and BPS dentures fabricated by a prosthodontist, with an age range between 45 and 87 years. After placement of dentures, details of postinsertion problems at each visit were recorded by asking questions which followed standard questionnaire.

**Results:** Patients wearing BPS dentures showed least postinsertion corrections with high acceptance rate compared with CCDs. Also, mastication and speech problems of CCDs ranged highest compared with discomfort problems followed by other problems and problems of appearance.

**Conclusion:** Within the limitations of this study, the biofunctional prosthesis had least corrections with high acceptance rate compared with conventional dentures in regard to many factors. Patients wearing complete dentures require periodic recall visits about denture maintenance, and a thorough knowledge about clinical and lab procedures of denture fabrication provides best guidance for lab technicians by a professional, thus ensuring complete denture success.

**Keywords:** Biofunctional prosthetic system dentures, Comfort, Complete denture therapy, Denture placement, Postinsertion problem.

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## INTRODUCTION

Edentulism is a debilitating and irreversible condition and is described as the "final marker of disease burden for oral health," as it compromises the quality of life of a patient. Although the number of adults losing their natural teeth is diminishing, there are still large numbers of edentulous adults in the population. A complete denture is a removable prosthesis that replaces all teeth within an arch. Many patients experience difficulties in wearing or using dentures. In some cases, they may not be prepared to accept the limited efficiency of dentures when compared with natural teeth they replace. Patient satisfaction is a critical determinant in the success or failure of complete denture therapy. The prosthodontist needs a thorough knowledge of anatomy, physiology, pathology, and psychology to treat these problems. Removable complete denture is one of the most common treatment modalities for completely edentulous patients. After denture insertion, patients very often face problems with the denture even after utmost care during fabrication procedure. The most common patient's complaint is traumatic ulcers, caused by dentures.<sup>1,2</sup>

Due to discomfort caused by these traumatic ulcers, patients are hesitant to wear dentures and they doubt the treatment capabilities and treatment plan of dentist. There are various factors which can cause these traumatic mucosal injuries. The most common factors are denture irregularities, overextended denture flanges, improper denture adaptation, improper occlusal contact, tissue undercuts, and denture porosities. Most of these are related to either laboratory or clinical errors during various steps of denture fabrication.<sup>3-5</sup>

Mikkonen et al<sup>6</sup> studied the dentures according to age, sex, and geographical region of living and discussed its importance with oral mucosal lesions occurring due to dentures. About 50% of denture wearers have lesions at some point of time; females were affected more than males. They also stated that the prevalence of lesions decreased with age. They also notified that the difference in occurrence of lesions varies according to the geographical region of living.

Jainkittivong et al<sup>7</sup> did a study to determine the prevalence of oral mucosal lesions and denture-related mucosal lesions in denture wearers and to correlate the prevalence with age, gender, type of denture, and any systemic

**Table 1:** Number of patients with CCDs showing different postinsertion problems

CCD	1st day	10th day	3 weeks	6 weeks	3 months
Pain	9	3	1	0	0
Looseness	8	3	0	0	0
Mastication	12	8	8	3	0
Gagging	2	0	0	0	0
Ulceration	9	2	1	0	0
Facial appearance	10	8	2	2	0
Speech	12	7	3	1	0
Teeth color and shape	8	4	0	2	0

**Table 2:** Number of patients with BPS dentures showing different postinsertion problems

BPS dentures	1st day	10th day	3 weeks	6 weeks	3 months
Pain	2	0	0	0	0
Looseness	0	0	0	0	0
Mastication	1	0	0	0	0
Gagging	0	0	0	0	0
Ulceration	2	0	0	0	0
Facial appearance	0	0	0	0	0
Speech	2	0	0	0	0
Teeth color and shape	0	0	0	0	0

condition. In their study, they found that approximately 20% denture-related lesions were due to trauma.

Many times, it is not only a professional responsible for success of complete dentures, but also a meticulous diagnosis and treatment planning, a proper patient education about different treatment options available and best suitable option for their oral condition, lab support, and proper motivation about use of dentures are very much required. Initially, many patients may experience few problems in using complete dentures, but a recall visit and proper guidance about its usage help reduce their queries, increase their confidence, and add to its success rate. Thus, this study aimed to evaluate the most common reasons of postinsertion denture problems and its frequency among CCD and BPS dentures.

## MATERIALS AND METHODS

This study was conducted on 92 patients (54 males and 38 females) in the age group of 45–87 years, who reported for complete denture treatment among 12 dental clinics of Bengaluru. With the help of case history and examination, patients selected were free from systemic diseases, inflammation, and infections of oral tissues. Patients with systemic diseases and neurological disorders were excluded. Patients were informed about the study and consent was obtained.

Patients were explained about different treatment options available and based on their selected treatment, patients were grouped into two. Group I had 44 patients wearing CCDs and group II had 48 patients wearing BPS dentures. Complete dentures were fabricated by a prosthodontist and placed in the patient's mouth by providing complete postinsertion instructions. Recall appointments were scheduled immediately after 24 hours of insertion and after 10 days, 3 weeks, 6 weeks, and 3 months consecutively from the day of denture placement.

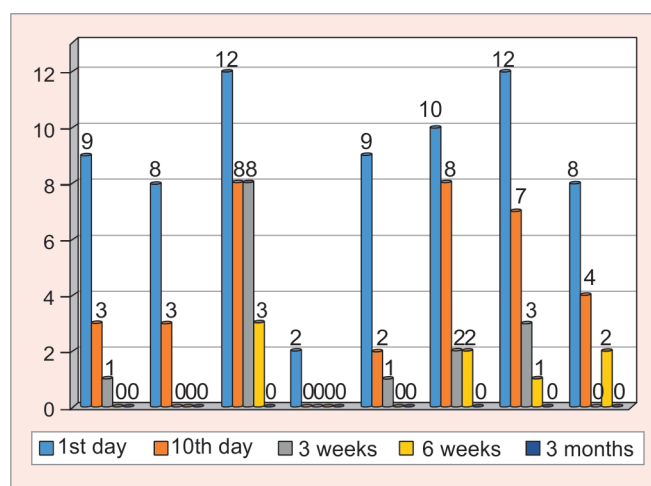
During recall visit, each patient was assessed for denture-related problems and necessary adjustments were made if necessary for their comfort, and proper

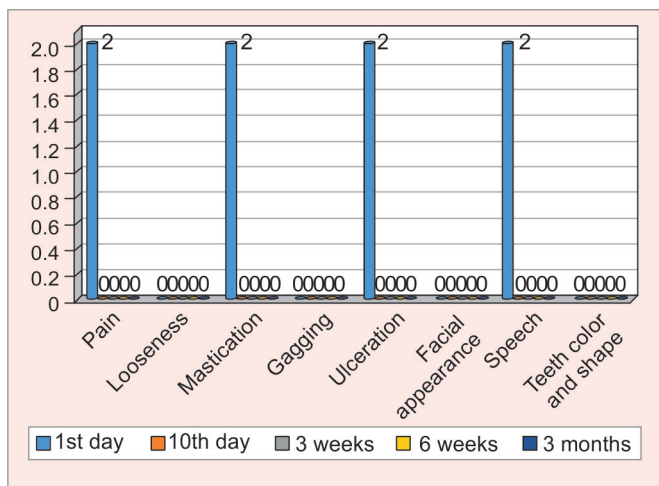
guidance was given about regular use of complete dentures. Descriptive statistical analysis was performed to obtain values and using chi-square test, a correlation between two groups of denture wearers was done from the day of denture insertion and statistically significant results were obtained.

## RESULTS

Patients were recalled on 1st and 10th day after denture placement, followed by 3 weeks, 6 weeks, and 3 months thereafter. At the first recall visit, necessary adjustments were made only for a few patients for mucosal ulcerations for patient's comfort. In the subsequent recall visits, patients were observed for any kind of discomfort due to speech, mastication by dentures, which reduced from the second visit onward.

The results (Tables 1, 2 and Graphs 1, 2) showed different postinsertion denture problems and its frequency among CCDs and BPS dentures. Patients wearing CCDs had more problems in first and second appointments and needed corrections in mandibular arch frequently compared with maxillary. In mandibular arch, ulcerations

**Graph 1:** Number of patients with CCDs showing different postinsertion problems



**Graph 2:** Number of patients with BPS dentures showing different postinsertion problems

were seen in the region of alveololingual sulcus and very rarely in labial frenum. Also, patients with CCDs had problems of speech, mastication, and esthetics, whereas in case of BPS dentures, patients were not having any problems from the first appointment itself, except for two who had small ulcerations.

The results (Graph 3) of our study showed that in comparison, the number of CCDs requiring adjustments were significantly higher than BPS dentures. Also, mastication and speech problems of CCD ranged highest compared with discomfort problems followed by other problems and problems of appearance.

**DISCUSSION**

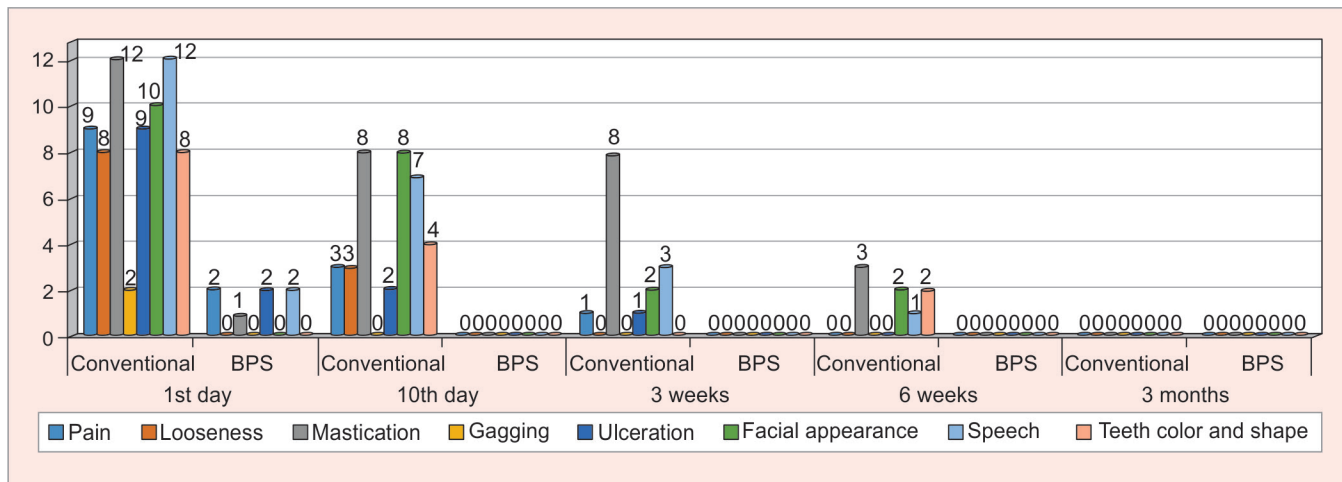
Denture placement represents the effort of a series of carefully considered and exacting procedure on the part of prosthodontist. The majority of patients with complete dentures are apparently well satisfied. According to Yoshizumi,<sup>2</sup> Langer and Sheppard, satisfaction and comfort rate in good-quality complete dentures varied

between 69 and 85%. Unfortunately, a small percentage of patients persistently seek adjustments. The sequence of denture adjustments, relines, and remake can develop into a cycle with some individuals.<sup>1</sup> In the present study, approximately 27% of patients required adjustment in maxillary denture in the first 24 hours after denture insertion.

Complete denture service cannot be adequate unless patients are cared for after the dentures are placed in the mouth. In many instances, the most crucial time in the patient’s perception of success and failure of denture is the adjustment period. Every denture-wearing patient should be in a recall program, just as any other dental patient. Boucher has advised recall appointments immediately 24 hours postinsertion and periodic check-up phase. Sharry has advised four recall appointments after 10 days, 3 weeks, 6 weeks, and 3 months consequently from denture.<sup>2-6</sup> The present study provided such consistent care for patients till their comfort and satisfaction.

Jainkittivong et al<sup>7</sup> did a study to determine the prevalence of oral mucosal lesions and denture-related mucosal lesions in denture wearers and to correlate the prevalence with age, gender, type of denture, and any systemic condition. In their study, they found that approximately 20% denture-related lesions were due to trauma. The patient should be dealt with in a sympathetic manner, keeping in mind that such complaints are very important to the patient. A careful scrutiny based on a thorough knowledge of normal and abnormal tissue response as well as of the fundamentals of complete denture prosthesis is essential in treating the problems connected with complete denture use.<sup>7,8</sup> Our present study also emphasized the same.

Brunello and Mandikos<sup>9</sup> carried out a study on 100 patients with newly fabricated complete dentures and found that the most common postinsertion complaint was pain and discomfort due to mucosal injuries and



**Graph 3:** Comparison of different postinsertion problems experienced by patients wearing CCDs and BPS dentures

traumatic ulcerations, which had no significant association with patient age, sex, or medical status. Our present study also had no such associations.

Dervis<sup>10</sup> in his study assessed the most common complaints of 600 patients, 3 months after insertion of their new denture. Statistically significant relationships were observed between denture construction faults or the condition of the patient's denture-bearing mucosa and patient complaints. Around 28.9% of patients complained of difficulties in speech and the findings were similar to the study of Aghdaee et al.<sup>11</sup> It may be due to the overextension of the upper dentures onto the soft palate which generally results in speech difficulties and it may cause gagging.<sup>12-18</sup> In the present study, patients showed such speech and gagging in the first appointment, which reduced from second appointment onward.

## CONCLUSION

Within the limitations of this study, it was found that patients wearing complete dentures experienced different postinsertion problems varying from too many problems to less or no problem, as per treatment options they had chosen. Most common problems experienced by patients were pain and discomfort, difficulty with eating, looseness, and esthetics of CCDs compared with BPS dentures. The success of a complete denture therapy depends upon various factors like patient's clinical conditions, appropriate selection of treatment options, fabrication and placement of quality complete dentures, and patient's thorough knowledge on complete dentures usage. Postinsertion complaints after denture placement are quite common and it becomes professional responsibility to evaluate and treat the cause of those denture problems for a patient's comfort and satisfaction which enhance its acceptance rate.

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