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Research Article

**ASSESSMENT OF FAILURE OF PROSTHESIS IN FIXED
PROSTHODONTICS AMONG PATIENTS****Dr Musab Azhar¹, Dr Kaynat Siddique², Dr Zara Rizwan²**¹Dental Surgeon, Tehsil Headquarter Hospital Sarai Alamgir, Gujrat, ²de'Montmorency College of Dentistry, Lahore.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

Introduction: Fixed dental prosthesis are becoming more popular for preservation of badly damaged crowns or endodontically treated teeth and also for replacing the lost or missing teeth not only in the developed countries but also in the developing countries across the world.

Objectives: The main objective of the study is to find the failure of prosthesis in fixed prosthodontics among patients.

Material and methods: This cross sectional study was conducted in de'Montmorency College of Dentistry, Lahore during June 2019 to December 2019. The data was collected from 100 patients. The data was collected through non-probability consecutive sampling technique.

Results: The data was collected from 100 patients. There were 40 females and 60 males and the mean age was 43.45 ± 2.56 years. The most common reason for replacement of multi-unit fixed dental prostheses were periodontal diseases affecting 92.8% of restorations, followed by defective margin in 90.4% of examined restoration, poor esthetic in 88% of restorations, while periapical involvement was found in 85.5% of examined fixed dental prosthesis.

Conclusion: It is concluded that the most common complications of fixed dental prosthesis were dental caries, decementation of crowns, periapical lesions, esthetic problem, coronal or radicular abutment fracture on patients using the prosthesis for one to five years.

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INTRODUCTION:

Fixed dental prosthesis are becoming more popular for preservation of badly damaged crowns or endodontically treated teeth and also for replacing the lost or missing teeth not only in the developed countries but also in the developing countries across the world. Since a fixed dental prosthesis assures the greater retention and stability in addition to comfort, it is more or less considered as the next best to implants [1]. A complication has been defined as “a secondary disease or a condition developing in the course of a primary disease or condition.” Whenever clinical failure of fixed dental prosthesis occurs, complications arise; complications also reflect substandard care. Most of the time, during or after appropriately performed fixed prosthodontic treatment procedures complications arise [2].

The longevity and complication rate of fixed dental prosthesis (FDPs) are greatly influenced by the level of skills of the clinician and his or her academic knowledge. The treatment with crowns/bridges prosthesis is one of the most common procedures in dental practices [3]. When correctly planned and designed, the fixed dental prosthesis not only provides predictable function but also enhances the aesthetics. On the other hand a poorly manipulated prosthesis is likely to fail prematurely and leads to irreversible damage to the teeth and supporting structures beneath. Sound diagnosis, radiographic examination, clinical assessment and technical skills are essential when dealing with failed or failing fixed prosthesis [4].

Replacing missing teeth by means of fixed dental prosthesis is a very common treatment modality in dentistry. Fixed dental prosthesis provides satisfaction for the patient and the dentist due to its stability, retention and availability. Rational for replacing missing teeth by fixed prostheses is to improve patient comfort and increase mastication efficiency, maintain the health and integrity of the remaining alveolar ridge, and elevate the patient’s psychological status [5]. To achieve such criteria, multiple factors must be kept in mind while planning and designing fixed prosthesis, starting with proper case selection, treatment planning, and considering all biological, mechanical and esthetic factors before beginning this way of treatment. Giving attention to all aspects

mentioned above will lead to better result with favourable longevity of the prosthesis. Otherwise, failure and clinical complications might be a possibility. A good knowledge about these complications will be of great value for clinicians to establish a treatment plan, design and choose the right material for the patient. And will be helpful for the success of the prosthesis to reach optimum satisfaction [6].

Objectives:

The main objective of the study is to find the failure of prosthesis in fixed prosthodontics among patients.

MATERIAL AND METHODS:

This cross sectional study was conducted in de'Montmorency College of Dentistry, Lahore during June 2019 to December 2019. The data was collected from 100 patients. The data was collected through non-probability consecutive sampling technique. The data was collected in a structurally prepared questionnaire which include all the demographic data of the patients. The failures were classified as biologic, mechanical and esthetic. Biologic failures included endodontic failures, compromised periodontal conditions, gingivitis, secondary caries, mobility, poor oral hygiene, root recession, pain and swelling, bone resorption, abscess formation, food impaction and pocketing. Mechanical failures included dislodged prosthesis, improper crown preparation, and fracture of an abutment, prosthesis fracture and loss of restoration along with abutment teeth.

Statistical analysis:

The data was collected and analysed using SPSS version 19. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 100 patients. There were 40 females and 60 males and the mean age was 43.45 ± 2.56 years. The most common reason for replacement of multi-unit fixed dental prostheses were periodontal diseases affecting 92.8% of restorations, followed by defective margin in 90.4% of examined restoration, poor esthetic in 88% of restorations, while periapical involvement was found in 85.5% of examined fixed dental prosthesis.

Table 01: Reasons for replacement of fixed dental prostheses.

Material	Frequency, n(% age)	Mean \pm S.D
All metals	85 (85%)	4.56 \pm 1.34
Porcelain	15 (15%)	0.09 \pm 0.89

Table 02: Failure percentage and mean prosthesis age

Location	Frequency, n(% age)	Mean \pm S.D
Posterior	56 (56%)	3.89 \pm 2.10
Anterior	34 (34%)	5.67 \pm 1.89
Anterior to posterior	10 (10%)	6.87 \pm 2.56

DISCUSSION:

This finding is similar to studies by Owall et al and Eckerbom et al in Sweden where they found that a significant number of decementations and root and/or abutment fractures were associated with use of crowns as compared to bridges [7]. In this study, the result shows that decementation of crowns, dental caries, abutment fracture complications were more common in fixed dental prosthesis especially in crowns which is similar with the study by Tan k et al where they found that carries and decementations are the major complication for fixed dental prosthesis failure [8]. The results of present study are also in coherence with study by Valderhaug & Karlsen in Norway where they found that complications like decementations and abutment fractures are more significantly found amongst patients using crowns as compared to bridges [9].

A multitude of reasons have been reported in the literature that result in the failure of crowns and bridges. In this study it was found that the most common cause of failure was due to biologic reasons (87.2%); with endodontic failures accounting for more than half of the failed restorations. Endodontic failures are likely to occur when the primary root canal treatment provided was not up to the standard principles. This can result in pain and swelling which may necessitate the removal of a prosthesis to carry out retreatment or retreatment through the already existing prosthesis; thereby resulting in failure of crowns and bridges. Such findings are present in the literature, which has shown that pulpal and root canal problems are a common cause of failure of fixed dental prosthesis [10].

CONCLUSION:

It is concluded that the most common complications of fixed dental prosthesis were dental caries,

decementation of crowns, periapical lesions, esthetic problem, coronal or radicular abutment fracture on patients using the prosthesis for one to five years. Fixed dental prostheses provide one of the best treatment modalities for replacing teeth. At present the average life of prosthesis at 4 years is less than satisfactory.

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