

## Original Research

### Assessment of prosthetic complications of dental implants

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#### ABSTRACT:

**Background:** The present study was conducted for assessing the prosthetic complications of dental implants. **Materials & methods:** The present study was conducted for assessing the prosthetic complications of dental implants. A total of 20 patients who reported with dental implant failure were enrolled. Complete demographic and clinical details of all the patients was obtained. A Performa was made and medical details of all the patients was recorded separately. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis. Results were evaluated by SPSS software. Chi-square test was used for evaluation of level of significance. **Results:** A total of 20 patients with dental implant prosthetic complications were analyzed. Mean age of the patients was 45.8 years. Majority proportion of patients were males. Veneer chipping, Abutment loosening, abutment fracture and crown decementation were seen in 30 percent, 15 percent, 25 percent, and 10 percent of the patients respectively. **Conclusion:** Veneer chipping is the most common prosthetic complication.

**Key words:** Prosthetic, Dental implants

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#### INTRODUCTION

Dental implantation is a surgical process of the jaw bone to support a crown, bridge, denture, and facial prosthesis. The basis of modern dental implantations is called osseointegration, it is the direct structural and functional connection between living bone and the surface of a load-bearing implant. Osteointegrated implants have been used to treat various condition ranging from edentulism to head and neck reconstruction. Dental implants are used to facilitate retention of auricular mandibular, maxillary, nasal, and orbital implants, and for bone-anchored hearing aids. The implant fixture is first placed so as to osseointegrate, and then a dental prosthesis is added. A variable amount of healing time is required for osseointegration before a crown, denture, or abutment is placed which will hold a dental prosthesis. Conventional implant practice dictates a delay between tooth extraction and implant placement, dividing the treatment into two differenced steps.<sup>1-3</sup> Endosseous dental implants have drastically changed how the teeth of individuals who are edentulous or

partially edentulous can be restored. The high survival rates reported for single and multiple missing tooth replacements have demonstrated the effectiveness of implant-supported restorations as an approach for oral rehabilitation. Implants can restore a single missing tooth without the need to replace the teeth next to it. Additionally, implants make it possible to provide fixed restorations for those who are completely or partially edentulous. Patients who have certain implants may experience failure within six months, severe bone loss, and problems and deformities that are irreversible.<sup>4-6</sup> Hence; the present study was conducted for assessing prosthetic complications of dental implants.

#### MATERIALS & METHODS

The present study was conducted for assessing the prosthetic complications of dental implants. A total of 20 patients who reported with dental implant failure were enrolled. Complete demographic and clinical details of all the patients was obtained. A Performa was made and medical details of all the patients was

recorded separately. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis. Results were evaluated by SPSS software. Chi-square test was used for evaluation of level of significance.

## RESULTS

A total of 20 patients with dental implant prosthetic complications were analyzed. Mean age of the patients was 45.8 years. Majority proportion of patients were males. Veneer chipping, Abutment loosening, abutment fracture and crown decementation were seen in 30 percent, 15 percent, 25 percent, and 10 percent of the patients respectively.

**Table 1: Prosthetic complications**

Prosthetic complications	Number	Percentage
Veneer chipping	6	30
Abutment loosening	3	15
Abutment fracture	5	25
Crown decementation	2	10
Others	4	20
Total	20	100

## DISCUSSION

In ancient times, either removable or fixed partial dentures were the treatment modalities for the missing teeth. Dental implants have emerged as new treatment modality for the majority of patients and are expected to play a significant role in oral rehabilitation in the future. A dental implant is a surgical component that interfaces with the bone of the jaw or skull to support a dental prosthesis such as a crown, bridge, denture, facial prosthesis or to act as an orthodontic anchor. 90%–95% has been reported as the success rate of implants over the 10 years. Although it has become the treatment of choice for most of the dentists, still, the complications arising from dental implant placement are the biggest challenge. Among various complications, bleeding from implant site, infection, and pain are early complications of implant. Dental implant failure is quite common. Lack of osseointegration during early healing, infection of the peri-implant tissues, and breakage are the reasons for implants failure. There are few indications and contraindications for implant placements. The contraindications of implant placement are patients with epilepsy, children and adolescents, patients having endocarditis, history of osteoradionecrosis, smokers, and diabetic patients. Absolute contraindications are patients with history of myocardial infarction, cerebrovascular accident, patients with history of bleeding, history of heart transplant, immune suppression, active treatment of malignancy, drug abusers, and psychiatric illness. Hence; the present study was conducted for assessing prosthetic complications of dental implants.<sup>6-8</sup>Hence; the present study was conducted for assessing prosthetic complications of dental implants.

A systematic review performed by Bryant et al including 46 studies with a 5-year follow-up period reported maxillary and mandibular implant overdenture survival rates of 78%-87% and 100%, respectively. Despite the fact that there was a difference between survival rates, similar maintenance event rates and numbers of visits for the 5-year follow-up period were reported. Watson et al reported three times higher fracture rates for overdentures in the maxilla compared with mandibular overdentures. Hutton et al reported a 27.6% rate of prosthetic failure of maxillary implant-retained overdentures, which was nine times higher than for mandibular ones. A potential reason for these problems was the compromised bone status that led to higher bending moments at the terminal abutments of the maxillary implant-retained overdentures. An increased number of prosthetic complications was reported with maxillary implant-retained overdentures without palatal coverage, therefore, palatal coverage is highly recommended, especially with a lower number of supporting implants. The maxillary masticatory mucosa is thicker than the mandibular mucosa, and the abutment heights are, accordingly, longer, leading to increased lever arms. This may be correlated to increased abutment-related complication rates for maxillary implant-retained overdentures compared with mandibular implant-retained overdentures.<sup>9-13</sup>According to a previous study, the use of Ceramage can reduce the risk of veneer chipping in comparison to that of conventional metal-based porcelain crowns since its elastic modulus is close to that of natural teeth.<sup>14</sup>

## CONCLUSION

Veneer chipping is the most common prosthetic complication.

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