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Implant Maintanances: The Role of Patient and The Dentist: Review

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Abstract

The demand for dental implants has risen now days greatly. Not only have techniques improved, but the benefits that implants provide patients have increased as well. Dental implants can improve appearance, confidence, and self-esteem; preserve remaining teeth; improve a person's ability to speak and masticate properly; and eliminate the need for full and partial dentures. Because dental implants represent a significant financial investment and require long-term maintenance by the patient for a healthy periimplant environment, the direct impact of oral hygiene maintenance by the patient will determine long-term prognosis and success of the dental implant.

Osseointegrated dental implants are being placed with increased frequency. Many of the current home care treatments for periodontal maintenance of natural teeth also can be used with dental implants, but a better understanding of oral health maintenance is crucial for the health and longevity of dental implant. The mucoperiosteal-implant seal is the major factor in determining long-term prognosis. Indigenous oral bacteria attaching to implant surfaces can lead to the breakdown of the biological seal surrounding the dental implant. Thus, long-term maintenance of a healthy peri-implant environment has a direct impact on long-term prognosis and success.

Keywords: Tooth brus, Dental Floss, Interdental Picks, Cavitron, Piezo Units Scalers, Curettes, and Polish Rubber cups.

1. Introduction

Dental implants is a highly successful and widely accepted procedure. However, the longevity of an implant-supported restoration may be compromised if improper or incomplete maintenance procedures/techniques used. Protocol for the maintenance of dental implants is a topic of much debate and documented research. The difference between periodontal maintenance and dental implant maintenance is striking. The principles are the same, but some techniques and products will differ from that of natural dentition.

2. Implant Failure

Implant complications can be due to a number of causes including prosthesis instability, implant mobility, occlusal trauma, fractured components, pain, inflammation, infection and neuropathy. In this paper, we are primarily interested in the maintenance of the implants and will not discuss in any great detail prosthetic, material or surgical complications.

Failure of implants may be described as early or late. Early failure follows shortly after placement and osseointegration is never really achieved. Late failure occurs in a successfully integrated implant some time after placement and subsequent restoration. The causes of late failure may be marginal infection/disease or biomechanical overload. However, an analysis of the clinical trials of the ITI system reveals that a very small proportion of failures seem to be associated with occlusal overload. From this analysis the major cause of late failures could be attributed to peri-implant infections. It was noted that patients with good oral hygiene tended to keep implants longer.

3. Implant maintenances

Common Threads for Home Care Aids

1. Tooth brushing
2. Home Irrigation Systems
3. Floss, Interdental Picks, and Brushes

Common Threads for office Care Aids

1. Visual Inspection
2. Debridement of Hard and Soft Deposits
3. Cavitron and Piezo Units Scalers and Curettes
4. Final Polish

4. Common Threads for Home Care Aids

Manual Toothbrushes—Soft or extra soft manual toothbrushes, if used correctly, may provide satisfactory breakup of the biofilm surrounding the dental implant. The use of soft or extra soft brushes as a means to clean the surface of a implant safely. [5]



Fig 1: Tooth Brushing Around Implant Surface for Removal of Soft Deposition

5. Sonic and Electric Brushes

Research reports that sonic and electric toothbrushes are safe and successful for the removal of soft deposits from a implant surface. [5]

6. Home Irrigation Systems

Irrigation units are helpful in debriding an implant prosthesis of soft debris and food particles. The safest solution is water, but most importantly, a solution free of alcohol is best. [5]

7. Floss

Different shapes of floss such as flat tape, round string, or Super Floss are safe for use around dental implants. [5]

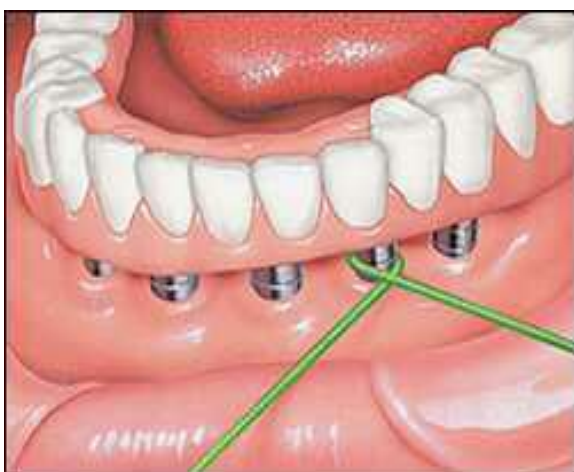


Fig 2: Flossing around the Implant for Removal of Soft Deposition

8. Interdental Brushes

Interdental picks and brushes are helpful for reaching between contacts and under prosthetic designs with closed contacts. Similar to natural dentition restored with fixed bridge work, the brushes and picks provide the patient a much needed aid in homecare. All parts of the picks or interdental brushes must be made of plastic or coated with plastic. [5]



Fig 3: Plastic-coated interproximal brush applied around implant abutments and under the superstructure for plaque removal.

9. Common Threads for office Care Aids

Debridement of Hard and Soft Deposits -Debridement of an implant prosthesis and the surface of exposed titanium must be performed with safe instruments/materials. The safety and suggested materials for maintenance of dental implants is ever-changing.

10. Cavitron and Piezo Units

The use of a Cavitron (DENTSPLY) or Piezo (SATELEC) unit has been widely accepted in the literature to enhance the breakup of biofilm and for the removal of hard deposits. Dentist must first ensure that any instrument selected is safe for use on the surface of implant. Studies have show that effects of ultrasonic scalers covered with plastic sheaths and ultrasonic scalers with carbon tips versus metal scalers. carbon- and plastic-tipped ultrasonics maintained smooth implant surfaces while traditional metal tips resulted in damaged implant surfaces.



Fig 4: Ultrasonic scaler

11. Scalers and Curettes

The use of scalers and curettes made of plastic or acrylic resin are most favorable for use around the peri-implant site. Short working strokes with light pressure are usually sufficient to remove most hard deposits. [5] One trick of the trade for the removal of hard deposits is to use the air syringe to dry the exposed body of the implant; the deposit will often flake off without the aid of much Resistance from a manual scaler [5]



Fig 5: Plastic scaler and curate

12. Final Polish

Basic steps for proper coronal polishing around implants include using a soft rubber tip, not brush, with appropriate nonabrasive paste. Aluminum oxide, tin oxide, APF-free prophylaxis paste, and low-abrasive dentifrice are all considered acceptable polishing abrasives for implants. Coarse abrasive polishing pastes are contraindicated, as is air-polishing. It should be noted that acidulated phosphate fluoride (APF)

products are also contraindicated, as they may etch the surface of implants. It may be helpful to polish first around implants with an acceptable polishing paste (i.e. Next fine polishing paste with diatomaceous earth, no pumice) to remove any plaque or debris present and to then determine if deposits need instrumentation.



Fig 6: Rubber cup

13. Conclusion

After osseointegration has been confirmed and the final prosthesis or restoration is complete, the patient is largely responsible for the success of an implant and needs to understand the importance of proper in-surgery implant maintenance appointments every three months for the first year to help prevent infection or failure of the implant. After one year a mature level of bone surrounds the implant, and the interval between maintenance visits should be based on the patient's general health, assessment of the implant, and home care. The dentist plays a key role in the success of dental implants for the patients by providing the education, assessment, safe implant maintenance and home-care recommendations.

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