Full-Arch Implant-Retained Restoration. Fixed or Removable?

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Dental implants as abutments for full-arch restorations are a widely accepted treatment modality. However, when scheduling the use of a fixed or removable implant-supported full-arch restoration, many factors should be considered. Due to the possible need for additional surgical steps to enhance the esthetics surrounding fixed restorations, removable implant-supported dentures, often are a preferable alternative. The current report presents a comprehensive treatment approach, wherein the patient undergoes different treatment modalities for restoration of the upper and lower full arches at different timelines along with discussing the advantages and disadvantages of each approach.

Although implants have become a widely accepted treatment modality, dentists and patients frequently are conflicted when deciding between a fixed or removable full-arch restoration. Many patients requiring a full-arch rehabilitation, wish for an esthetically sophisticated and fixed-implant-supported dentures (RIRD). In such cases, the esthetic outcomes are often severely restricted by bone loss as a cause of advanced periodontitis and/or tooth extractions.

Modern restorative materials and techniques make implant-supported removable dentures (RIRD) to an esthetically and functionally acceptable result. The treatment modality of using telescopic crowns as attachments; 4) implant or teeth retained bridges for restoration of the mandible.

The patient did not accept this proposal and sought treatment from another dentist. One year later, the patient presented again for consultation. Eleven implants have been placed (Fig. 1-25, 24, 23, 22, 24, 16, 18, 29, and 32) due to advanced chronic periodontitis as well as caries, and surgical treatment of the rest dentition by access flap surgery; 2) strategic placement of implants to increase the number of abutments; 3) full-arch restoration of the maxilla with a RIRD using telescopic crowns as attachments; 4) implant or teeth retained bridges for restoration of the mandible.

The patient initially insisted on fixed restorations. Unfortunately, the dentist fulfilled this wish, despite the existing clinical conditions of loss of hard and soft tissue. Aggressive procedures were performed prior to implant placement, resulting in complications and tissue destruction. While the fixed restoration resulted in a functionally satisfactory treatment outcome, the patient was displeased with the esthetic results. The main concern was the unnaturally long tooth shape necessary to compensate for the insufficient alveolar ridge height. The esthetic outcome in such cases can be difficult to be fulfilled. Although several predictable periodontal surgical procedures can be used to augment hard and soft tissue to meet esthetic demands, the patient could reject these options or the dentist might not be entirely familiar with the outcomes of these selected procedures. Both scenarios can produce unsatisfactory results in such cases and can be difficult to correct.

This report presents a case in which the patient was treated first with fixed restorations supported by implants and natural teeth and subsequently treated with an implant-retained removable denture.

The patient was dissatisfied with the esthetic result, but also adds an additional exorbitant expense and time consumption for replacement, serves as a definite disadvantage while electing this alternative. In contrast to above mentioned shortcomings, ease of retrievability of telescopic crown supported RIRDs proves highly beneficial over other alternatives while overcoming the commonly encountered implant or natural teeth complications. Several complications related to dental implants range from implant-abutment screw loosening, peri-implant mucositis or peri-implantitis, or fracture of one of the used implants. Also, there is a potential risk of losing the used natural teeth abutment due to periodontal and/or endodontic/carious reasons that can affect the overdenture support. However, these circumstances can be evaded and continued usage of the telescopic crowns supported RIRD is possible with minor adjustments to the existing prosthesis without compromising long term success of these restorations. The case presented here raises the issue of whether dentists and/or surgeons should just follow patients’ wishes and exhaust all high-tech possibilities or respecting periodontal principles should combine implant prosthetic experience with evidence-based but less luxurious surgical techniques. In many circumstances, the latter route is a better and safer treatment alternative.

References

Fig. 1: Initial examination. Orthopantomograph.
Fig. 2: Initial examination. Clinical view.
Fig. 3: 2nd consultation. Orthopantomograph after implant placement and prosthetic treatment.
Fig. 4: 2nd consultation. Clinical view (front).
Fig. 5: 2nd consultation. Clinical view (right).
Fig. 6: Orthopantomograph. After placement of implant #44.
Fig. 7: Provisional implant abutments and extraction.
Fig. 8: Temporary restorations retained on the provisional implant abutments.
Fig. 9: Customized gold implant abutments.
Fig. 10: Fitting of the electroformed copings.
Fig. 11: Milled titanium framework.
Fig. 12: Final RIRD using telescopic crowns as attachments.
New organic toothpaste may inhibit harmful bacteria

By OTI

SEOUL, South Korea: A Seoul dentist has developed an all-natural toothpaste that aims to reduce the health risks posed by Streptococcus gordonii, an oral bacterium that initiates dental plaque formation. Once in the bloodstream, which it may enter through bleeding gingivae, for example, the bacterium also causes blood clots, which can lead to life-threatening conditions such as infective endocarditis, heart attack or stroke.

South Korean dentist Dr Hyung-Joo Moon, head of the Moon Dental Hospital in Seoul, recently obtained the patent for his bacteria-inhibiting organic formula from the Korean Intellectual Property Office. Conventional toothpastes mainly focus on combating two major oral bacteria, Streptococcus mutans and Porphyromonas gingivalis, which are both associated with tooth decay and periodontal disease. However, inspired by a joint study by the Royal College of Surgeons in Ireland and the University of Bristol, which found that S. gordonii can trigger an infection of the inner lining of the heart when entering the bloodstream, Moon started developing a toothpaste that especially inhibits the growth of these bacteria.

"Endocarditis is a serious disease treated only by surgery or strong antibiotics, which is becoming more difficult due to growing antibiotic resistance. Considering this, using my toothpaste will reduce the risks potentially caused by the bacterium," Moon told the Korea Times.

The toothpaste’s anti-inflammatory ingredients include neem and cas- ter oil, herbal extracts made from psyllium seed, Japanese star anise, and Japanese cornelian cherry. "Unlike most other toothpastes that use artificial chemical preservatives, this toothpaste is only composed of natural, organic compounds, which greatly reduces the risk of side effects," Moon said.

As the oral mucosa is very susceptible to absorbing harmful substances into the body, it is especially important to use natural ingredients for oral care products, he emphasised. Tested among his patients, the toothpaste’s formula proved to help relieve inflammation, as well as sore gingivae and toothache.

The toothpaste is not available for purchase yet, but Moon is working on releasing it to market soon.

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