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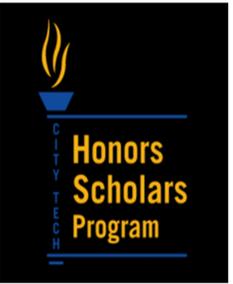


REPLACING A SINGLE TOOTH: SINGLE IMPLANT VS. THREE UNIT BRIDGE

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ABSTRACT

The aim of this study is to attain a general understanding regarding differences of three-unit bridge and single-tooth implant. An in-depth analysis of advantages and disadvantages to both forms of treatment in order to obtain esthetic and functional dental prosthesis that replace a single natural tooth when it's missing.

MATERIALS AND METHODS

- Selected information is from online, lecture slides and books. Eight dental resources were selected.
- Key words: three Unit Bridge; dental implants; single tooth; dental prosthesis, implant-supported; tooth loss
- Experts consulted: Professor Daniel Alter CDT/MDT, Professor Anthony Sena, Professor Laura Andreescu CDT, experienced in implants and fixed prosthodontics.

INTRODUCTION

Clinicians are routinely faced with the need to restore a single tooth. Traumatic incidents, caries and congenitally missing teeth are common etiologies. In these situations, the treatment options include a traditional three unit bridge and a single-tooth implant. Although each is a viable treatment alternative, the implant restoration has definite advantages. It has become an esthetic, functional restoration with long-term predictability, and it is the ideal treatment for a single-tooth replacement in a pristine dentition. If the adjacent teeth around a missing space are already cracked or decayed and require crowns, a bridge is a more practical option for some patients. However, a dental implant is almost always the top option and most conservative option for tooth replacement. This is because teeth adjacent to the missing space are not affected by the placement of an implant.

RESULTS

Replacement of missing teeth is one of the most important needs for patients attending clinics to restore esthetics and/or function. Many treatment modalities are available for replacing a single missing tooth; removable partial denture, three-unit bridge or dental implant. Each modality is a possible treatment option and has its own advantages and disadvantages. There are several factors affecting the final treatment decision regarding the replacement of a missing tooth, these factors are case dependent. In many cases if more than one treatment option is possible, the definitive replacement depends on patient's decision/financial status or influenced by the patient's gender, age, public awareness and patient's knowledge. Therefore, it is mandatory to understand the patient's needs and demands to determine the kind of treatment that ensures the patient's satisfaction with the dental service. In many cases the cost of the treatment is considered as a major determinant and ahead of oral health status and patient preference. Tooth implants are considered the ultimate dental restoration solution for tooth replacement, especially when only a single tooth needs to be replaced. Traditionally, the best dental restoration for a single missing tooth was a three-tooth bridge, better known as a three-unit bridge. This type of missing teeth restoration worked by linking three false teeth together. The middle tooth was used to bridge the gap. Even though this type of dental restoration was considered state-of-the-art for many years, it had its limitations. For instance, the fabrication of a three-unit bridge required the teeth on both sides of the gap to be whittled down to allow for the false teeth to be slipped over the top of the teeth. Because the three teeth were linked together, they could not be cleaned in the same way as normal teeth. In addition, they required special dental cleaning tools in order to maintain healthy gum tissue. Today, dental implants are the first choice to replace missing teeth and dental restoration. In the case of a single missing tooth, a tooth implant can be placed by the implant dentist in the jawbone area of the missing tooth. The implant will serve as a replacement for a tooth root and an individual dental crown. The total apparatus is referred to as a single-tooth implant crown.

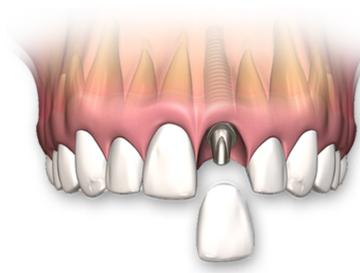
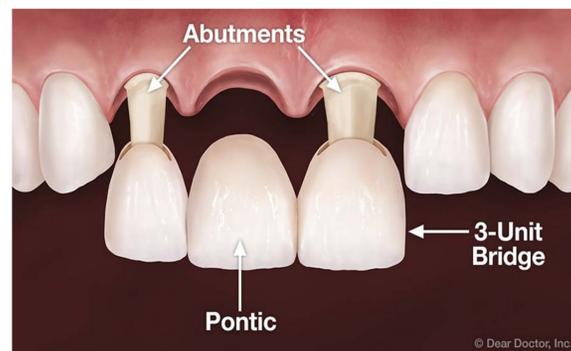
	BRIDGE	IMPLANTS
LONGEVITY	7-10 years	Lifetime
PRESERVATION OF HEALTHY ADJACENT TEETH	No	Yes
TRANSMISSION OF FORCE TO:	adjacent teeth	bone
PREVENT BONE LOSS & PRESERVE FACIAL APPEARANCE	No	Yes
REQUIREMENT FOR PERIODIC ADJUSTMENTS	Yes	No
ACCELERATED LOSS OF ADJACENT TEETH	Yes	No

Once in place, the dental implant crown will look, feel and function like your natural teeth. They are cleaned and flossed just like your natural teeth, and best of all, they do not require any special tools to clean around them, like bridges. Although tooth implants will not decay, they require that you maintain impeccable oral hygiene. If a patient is missing three or more teeth in one area, another option is an implant-supported bridge. Instead of preparing natural teeth for crowns, implants are placed, and the gap is bridged between two implants. While some bone will still be lost in areas of pontic teeth (the tooth supported by the anchor teeth), some bone will still be retained where implants were placed.

DISCUSSION

Three Unit Bridge

A dental bridge is used to bridge the gap created by missing teeth. In order to place this restoration, the dentist prepares the teeth on either side of the missing space for crowns. A three-unit crown is then cemented into place, joining the two teeth on either side of the missing space together. One of the disadvantages of placing a bridge is that it requires the supporting teeth to be prepped for crowns. This means that tooth structure must be removed on these teeth to accommodate the crowns. These supporting teeth also sustain more chewing forces which can shorten the life of the bridgework. Bridges can be made to look very natural, which makes them a good option to restore the aesthetic appearance of the teeth. Unfortunately, bridgework does not often last a patient's lifetime, and sometimes bridges can be difficult for patients to clean, making them more susceptible to cavities around the margins of the crowns. The traditional treatment for a single edentulous space is a conventional fixed partial denture. A major shortcoming of this alternative is the significant tooth reduction of the abutments. In addition, the longevity of a fixed partial denture is estimated at 8.3-10.3 years. Consequently, a young patient would require numerous replacements of this restoration over a lifetime. However, in some instances, a three-unit bridge is the most appropriate choice.



Implants

A dental implant is an excellent long-term solution to replace missing teeth that is available today. An implant consists of a titanium post (screw) which is placed in the jawbone. This acts as the new root of the tooth. Once this post is placed, there is usually a healing period of 3-4 months. This allows the implant to properly integrate into the bone. After the healing phase is complete, the dentist will place a crown over the top of the implant. The crown will restore the function and aesthetic appearance your smile. Since the early 1980s, the use of osseointegrated implants has become a well-established and predictable treatment. Initially, oral implants were used in the completely edentulous situation. Later, a high degree of success was achieved with implants in partly edentulous jaws. The single-tooth implant has also become a predictable treatment option. Implants offer significant advantages over resin-bonded or conventional bridges. They prevent the needless restoration of sound teeth adjacent to the edentulous area as would be required for a fixed partial denture. In instances where the adjacent teeth have no restorations, a single-tooth implant provides the opportunity to preserve the integrity of the existing teeth.



For young people with congenitally missing teeth, a single-tooth implant is undoubtedly the restoration of choice. The final restorations are highly esthetic and functional and preserve sound tooth structure of the existing teeth. Patients who have problematic teeth that need to be removed or have already had teeth removed are candidates for implants. In rare cases, patients may not be eligible for implants. Occasionally, if a patient's sinus is naturally positioned lower, or has lost bone at the site of the missing tooth from infection, the oral surgeon may need to perform additional surgical procedures to ensure adequate bone to support implants.



CONCLUSION

Many factors must be considered when choosing between a 3-unit bridge and an implant for the replacement of a single tooth. Often the bias of the dentist plays a role rather than objective appraisal of the treatment options. There are advantages and disadvantages to both forms of treatment. A 3-unit bridge is within the training and experience of most restorative dentists. This form of restoration requires the reduction of the abutment teeth resulting in an increased incidence of endodontic therapy and root decay. If the abutment teeth have large restorations, they would benefit from abutment preparation. However, if the teeth have small restorations or if they are virgin teeth, they would be damaged by abutment preparation and be placed at increased risk. In addition, cement loss or wash out under a retainer can lead to tooth loss. Bridges constitute a single restoration. If one part of the bridge fails, the whole restoration fails, often with the loss of an abutment tooth. Despite these disadvantages, a 3-unit bridge is usually completed in a short time, often with the financial support of dental insurance, and esthetic control is predictable.



Implants require training that is not sufficiently addressed in most undergraduate dental programs and, therefore, is not within the practice realm of all restorative dentists. An implant takes longer to complete than a 3-unit bridge, but costs about the same if grafting is not required. Dental insurance seldom helps with financial support for implants. In addition, implants can be more demanding if bone and soft tissues are inadequate. Areas of tissue deficiency should also be addressed with grafting in the pontic space for three-unit bridges, but often these defects are ignored. The tremendous advantage of the single-tooth implant lies in the fact that the adjacent teeth are not prepared. These teeth are left in their current state of health and are not linked as part of a larger restoration. The adjacent teeth have a better prognosis, as they are not subject to a higher incidence of endodontic therapy and decay as a result of tooth preparation. Patients should be properly advised of the advantages and disadvantages of both types of single-tooth replacement, so they can make an informed decision. Advances in technology have altered treatment philosophy in the replacement of a single tooth. In many instances, a single-tooth implant is the restoration of choice, providing a highly esthetic, functional, long-term result.

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