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Theoretical Study on the Restoration of Missing Teeth

Yongjiang Liu, Rasheed Abdulsalam*, Fazle Khuda*

Lincoln University College, Petaling Jaya, Malaysia
**Author to whom correspondence should be addressed.*

Abstract: ***Teeth are an important part of the human body. Their main function is to chew food and they work together with the tongue and lips to complete the pronunciation function. If the teeth are bad or missing, it will not only affect the gastrointestinal function and increase the burden on the stomach, but also affect the appearance. With the advancement of medical and health technology and the development of materials science, tooth restoration technology has been applied in clinical practice, and problems such as tetracycline teeth, fluorosis, and missing teeth can be effectively solved. Next, the author will popularize relevant knowledge for everyone, hoping to provide help to everyone.***

Keywords: Denture Comparison; Oral Rehabilitation; Prosthodontic Care; Dental Restoration.

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1. Introduction

When it comes to tooth restoration, I believe everyone has heard of it, but they may know little about the specific content of tooth restoration.

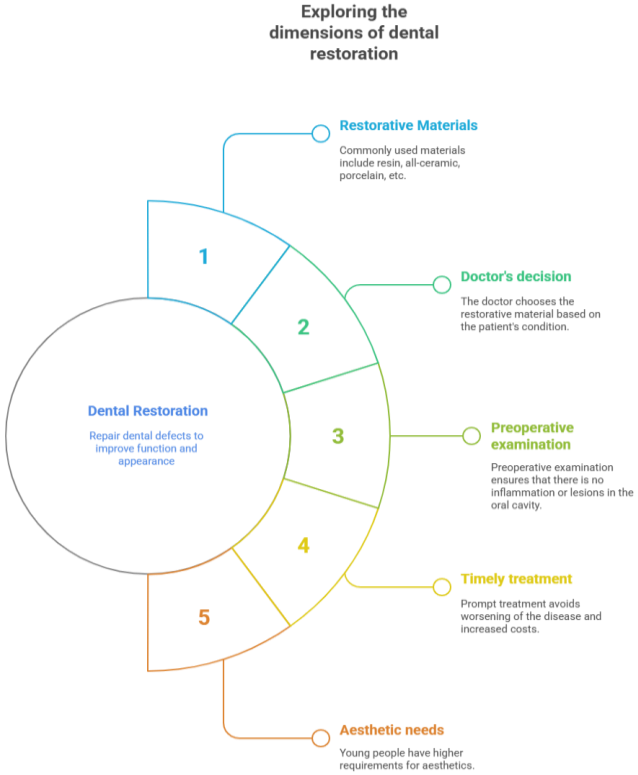

Figure 1: Dimensions of Dental Restoration

Explanation: This infographic illustrates key aspects of dental restoration procedures. It highlights 5 main components: (1) restorative materials (resin, all-ceramic, porcelain), (2) aesthetic needs of young patients, (3) doctor's material selection process, (4) purpose of dental restoration (functional and appearance improvement), and (5) importance of preoperative examination and timely treatment. The visual uses a circular diagram with numbered segments to present this information systematically.

Simply put, tooth restoration is the process of repairing tooth defects with restorative materials to improve tooth condition and restore tooth function. Commonly used restorative materials include resin, all-ceramic, porcelain, etc. The doctor will decide which material to use based on the patient's actual situation and requirements, and then perform the restoration operation to restore the function and condition of the teeth. Routine examinations are required before tooth restoration to ensure that there is no inflammation or other lesions in the oral cavity. When tooth defects occur, restoration treatment should be carried out as soon as possible to avoid worsening of the disease and affecting the treatment effect and increasing medical expenses. With the improvement of material living standards, people have higher requirements for tooth restoration, and young groups have higher requirements for aesthetics. Therefore, doctors must have certain operational capabilities and choose appropriate restoration methods according to each person's dental condition to ensure the safety and effectiveness of restoration.

2. Materials and Method

Comparison of Denture Restoration Methods

Characteristic	Removable Denture	Fixed Denture	Dental Implant
Applicability	Suitable for many missing teeth	Aimed at one or more missing teeth	Replaces missing teeth
Stability	Not very stable	Good stability	Good stability
Impact on Adjacent Teeth	May damage abutment teeth	Damages healthy teeth	No damage to natural teeth
Comfort	Foreign body sensation	Small size, close to natural teeth	Similar to real teeth
Maintenance	Requires daily removal and cleaning	Easy to clean	Easy to clean and maintain
Cost	Lower price	Moderate price	Expensive
Procedure Time	Simple production process	Simple production, short cycle	Multiple stages, 3-6 months
Aesthetic	Repairs appearance	Natural appearance	Strong and beautiful
Bone Impact	Accelerates bone absorption	Prone to gingival atrophy	Delays bone absorption

Figure 2: Comparison of Denture Restoration Methods

Explanation: This comparison chart evaluates three dental restoration techniques (removable denture, fixed denture, dental implant) across 9 criteria: applicability, stability, impact on adjacent teeth, comfort, maintenance, cost, procedure time, aesthetic results, and bone impact. The side-by-side presentation clearly shows how implants outperform other methods in most categories despite higher cost, while removable dentures remain the most

economical but least stable option.

2.1 Removable Denture Restoration

In medicine, removable dentures are called removable dentures. They are mainly designed for people with missing teeth. They are customized dental appliances and are suitable for patients with many missing teeth and loose remaining abutment teeth. In addition, patients who do not accept grinding of abutment teeth and cannot implement fixed restorations can also choose removable denture restorations. The remaining teeth, bone tissue and mucosa under the base are used as support. The retention mainly depends on the denture fixing position and base. The production process is simple. By hanging the dentures on both sides of the teeth, the appearance of the missing teeth can be repaired and their functions can be restored. Removable dentures are divided into full-mouth removable and partial removable. If all teeth are missing, full dentures are usually required. If the teeth are partially missing, choose partial dentures.

Advantages of removable dentures: First, they are widely applicable. Patients who are generally over 18 years old and have normal alveolar bone development can be given removable dentures after edentulousness. In addition, patients who need transitional dentures or immediate dentures can also use removable dentures. Second, they are convenient.

It is easy to put on and take off, and is easy to clean and maintain. Before going to bed every day, you can take off the removable dentures, brush, soak, and rinse them to remove food residues and soft plaque on the dentures, which is conducive to keeping the mouth clean. Third, it can restore multiple missing teeth at the same time. Fourth, the price is lower than other restoration methods, which is easy to promote and economical.

Disadvantages of removable dentures: First, they are not stable, their chewing function needs to be improved, and their self-cleaning ability is poor. Second, because removable dentures are removable, they are equipped with bases and are large in size, which will produce varying degrees of foreign body sensation during wearing. Third, removable dentures often have clasps, which can damage the abutment teeth if worn for a long time, easily cause mucosal ulcers, and accelerate the absorption of alveolar bone. Fourth, although removable dentures can be removed for cleaning and maintenance, it is troublesome to take them off and put them on every day.

2.2 Fixed Denture Restoration

This restoration method uses adhesives to bond the prepared abutment teeth or implants on both sides of the missing tooth, so that the anatomical morphology and physiological function of the missing tooth are restored and the restoration process is completed. It is aimed at one or more missing teeth in the dentition, which the patient cannot remove or wear by himself. The missing teeth first need to be equipped with fixed dentures. The teeth on both sides of the missing teeth are ground off to form a fixed bridge, which is then repaired. Generally, a fixed bridge can repair 2 to 3 consecutive missing teeth. Of course, the specific location of the missing teeth must be considered.

Advantages of fixed denture restoration: First, it has good stability, strong retention, high chewing efficiency, and does not feel like dentures when eating, and has high overall comfort. Second, it is small in size, basically close to natural teeth, and has good edge tightness. Third, it has no obvious effect on the patient's tongue function and pronunciation function. Fourth, it uses porcelain tooth materials, which have good biocompatibility, no obvious stimulation to oral tissues, good wear resistance, strong, not easy to damage, no need to take it off, and easy to clean.

Fifth, in terms of color, fixed dentures are almost the same color as natural teeth, with a translucent texture, natural and realistic, meeting the patient's aesthetic needs. Sixth, the production is simple and the cycle is short.

Disadvantages of fixed denture restoration: First, it damages healthy teeth. For patients who have fixed bridges, in most cases, the teeth on both sides of the missing teeth are intact, and fixed bridges require grinding away healthy teeth, which is irreversible damage. If the grinding operation is improper, it will lead to complications. Second, the risk of infection is high. Patients with missing teeth have poor dental conditions, and some have oral diseases such as chronic periodontitis and gingival bleeding. The risk of infection increases after porcelain teeth are made. Once oral infection occurs, the symptoms of periodontal-related diseases will worsen. Third, gingival atrophy is prone to occur. Porcelain teeth are not connected to the alveolar bone, lack the support and stimulation of the tooth

roots, and are prone to alveolar bone atrophy, and then gingival atrophy. The typical manifestation is that the gums at the missing tooth position are significantly lowered or even have gaps. Fourth, it is easy to loosen and get stuck in the teeth. For single tooth loss, it is necessary to grind away the teeth on both sides and wear a porcelain bridge crown, which will cause food residue and filling in the defect position when eating. If it is not cleaned properly, bacteria will breed, causing infection and even caries on both sides of the teeth.

2.3 Dental Implant Restoration

Dental implants are known as the third set of teeth for humans. They are a restoration method that implants metal implants into the upper or lower alveolar bone tissue. The metal implants are equipped with crowns or bridges, which can replace missing teeth and perform their functions. After the implant restoration is completed, the artificial teeth are not only strong but also beautiful. Compared with other restoration methods, they are expensive, but they are the closest to one's own teeth. Before dental implants, local anesthesia is required and inflammation is checked. The best treatment time for dental implants is 3 to 6 months after the removal of bad teeth such as decayed teeth or tooth defects.

Advantages of dental implant restoration: First, it is similar to real teeth. Dental implants are designed based on the structure of natural teeth. Not only are they similar to natural teeth in appearance, but they also have high chewing efficiency and comfort, and can almost achieve the same effect as natural teeth. Second, they have good stability and high chewing efficiency. The implant combined with the alveolar can achieve good retention and stability, provide support for higher tooth bite force, and maximize the function of the teeth. Third, there is no damage to natural teeth. Dental implants are only carried out in the position of missing teeth, and have no obvious effect on adjacent teeth, let alone damage to adjacent teeth; no base or clasp is required to assist in retention, so there is no foreign body sensation, and it is comfortable and convenient. Fourth, it is beneficial to oral health. Dental implants transmit chewing force well, can effectively delay alveolar bone absorption, and are easy to clean and maintain, which is of great significance to periodontal health.

Disadvantages of dental implant restoration: First, dental implant restoration is not suitable for everyone. It is not recommended for patients with bone metabolic diseases, blood system diseases, and uncontrolled immune system diseases. Second, compared with other restoration methods, dental implant restoration is expensive. Third, dental implants require multiple stages such as implant surgery, healing, and base installation, which usually takes 3 to 6 months to complete.

3. Results and Discussion

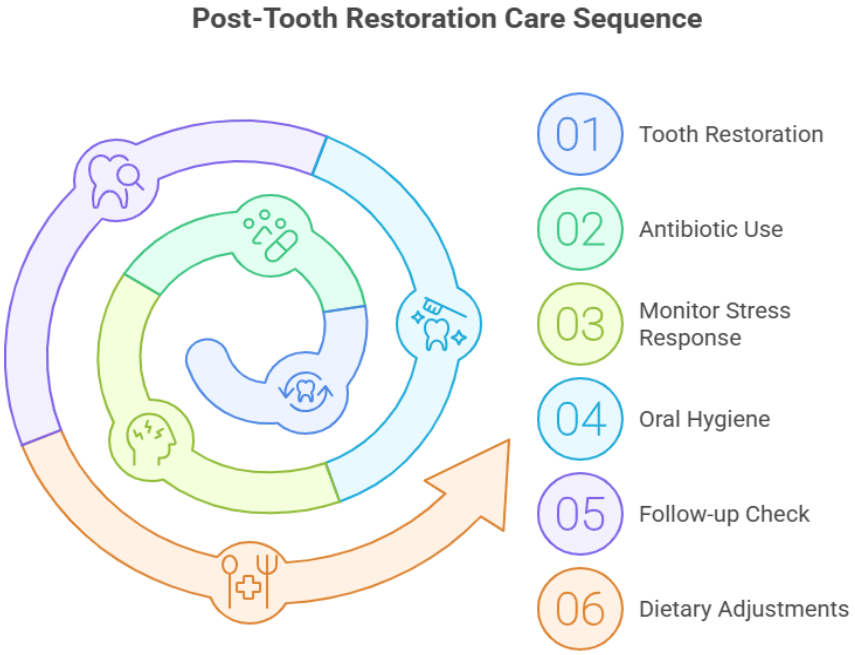

Figure 3: Post-Restoration Care Sequence

Explanation: This sequential diagram outlines 6 critical steps for post-restoration care: (1) initial restoration, (2) antibiotic use to prevent infection, (3) stress response monitoring, (4) oral hygiene maintenance, (5) follow-up checks, and (6) dietary adjustments. The numbered circular format emphasizes the progressive nature of proper aftercare following dental restoration procedures.

In recent years, tooth restoration has gradually matured, and more and more people have begun to understand and apply this technology, which has promoted the development of stomatology. Of course, tooth restoration is not a one-time solution. After restoration, attention should be paid to maintenance and relevant precautions to obtain a more ideal restoration effect.

Dental restoration will inevitably cause some stress to the patient, especially for patients with many implants and long-term use, so they should pay attention to preventing infection. For simple implant surgeries, oral antibiotics can be given. For complex restoration surgeries, intravenous antibiotics are required to prevent infection.

Based on individual differences among patients, different degrees of stress response may occur after tooth restoration. Some patients will have mild symptoms that disappear on their own, while others will experience local edema. Adverse reactions and complications should be monitored. Usually, the symptoms will gradually disappear after 3 to 5 days.

Oral hygiene is particularly important in our daily lives. After dental restoration treatment, you should pay more attention to oral hygiene. Generally, you should not brush your teeth or rinse your mouth within 24 hours after restoration to prevent bleeding. You can use mouthwash to rinse your mouth after meals to avoid food residues. You can drink water 2 hours after the restoration is completed and avoid eating overheated or overcold food.

After the tooth restoration is completed, a follow-up check is usually required every six months. The dentist will check the tooth condition and use professional tools to clean the implant and surrounding tissues. If there is any abnormality, the doctor should be informed in time for treatment.

Diet is closely related to oral health. During the recovery period of tooth restoration, you should avoid smoking and drinking, and try not to chew hard food, such as bones, nuts, etc. If the patient has slight pain and discomfort after tooth restoration, no medication is needed; if the local pain is obvious, painkillers can be used as prescribed by the doctor.

4. Conclusion

In summary, tooth restoration, as an important dental service, has brought good news to the oral health of patients with missing teeth. Patients should seek medical treatment in time when they have dental problems, and choose a tooth restoration plan that suits them according to their actual situation to avoid further deterioration of the problem. Finally, I wish everyone can have healthy teeth.

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