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Short Communication

Dental Implants and Their Medical Uses

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DESCRIPTION

Dental implant is a prosthesis that connects to the jaw or skull bone to support a dental prosthesis such a crown, bridge, denture, or facial prosthesis, or to act as an orthodontic anchor. The biologic process of bone regeneration, in which materials like titanium or zirconia develop an contact with bone, is the foundation for modern dental implants. The implant device is inserted first to verify that it will be osseointegration, and then a dental prosthetic is attached [1]. Before a dental prosthetic is linked to the implant that will hold a dental prosthesis/crown implanted, osseointegration takes a certain length of time.

The health of the person receiving treatment, medicines that impact osseo integration, and the health of the tissues in the mouth all seem to have a role in the success or failure of implants. The implant will be subjected to a certain level of stress during normal function because biomechanical forces exerted during chewing can be high, planning the position and quantity of implants is critical to the prosthetic's long-term health. Implant placement is established by the position and angle of neighboring teeth, lab simulations, or computed tomography with CAD/CAM simulations and surgical guides known as stents [2]. Healthy bone and gingiva are required for the long-term success of osseo integrated dental implants.

Dental implants became more fashionable use rising from 0.7 percent of patients missing a minimum of one tooth to five. Individual teeth (single tooth restorations), numerous teeth, or missing teeth or dental arches can all be restored using implants (implant-retained retained fixed bridge, implant-supported over denture). It's worth noting that there are alternatives to tooth extraction. In orthodontics, dental implants are utilised to give anchoring. The use of implants to keep obturators in place is a developing field. Connections to implants put in the facial bones can be employed in facial prostheses to address face irregularities (e.g: from cancer treatment or injuries). The implant may be used to keep a fixed or detachable prosthetic that replaces part of the face, depending on the situation.

Single tooth implant restoration

Individual freestanding units are used to replace missing individual teeth and are not linked to other teeth or implants. An anchor screw is used to connect an implant abutment to the implant for individual tooth replacement [3]. The crown is then attached to the abutment with dental cement, a small screw, or by fusing the two pieces together during manufacture. In the same way, dental implants can be used to secure a multiple tooth dental prosthesis, such as a fixed bridge or removable dentures. On a long-term basis, there is limited evidence that implant-supported single crowns outperform tooth-supported Fixed Partial Dentures (FPDs). Dental implant therapy, on the other hand, is the first-line strategy for single-tooth replacement due to the good cost-benefit ratio and high implant survival rate. For the restoration of one missing tooth, dental implants are less expensive and more efficient over time than tooth-supported FPDs. The necessity for a surgical procedure is the most significant downside of dental implant surgery.

Implant retained fixed bridge or implant supported bridge

A set of teeth connected to dental implants and unable to be removed by the user is known as an implant-supported bridge. They are similar to traditional bridges, except that one or more implants support and retain the prosthesis instead of natural teeth. Bridges are used to connect several implants and can also act as anchor points for teeth [4]. The teeth that are directly on top of the implants are called abutments, whereas the teeth that are between the abutments are called pontics. Implant-supported bridges attach to implant abutments in the same way that single-tooth implant replacements work.

Implant-supported over denture

A removable implant-supported over denture is a detachable prosthesis that replaces teeth and relies on implants for support, stability, and retention. Complete dentures are most usually used to reconstruct edentulous dental arches. The abutment is designed as a small connector (a button, ball, bar, or magnet) that can be attached to comparable adapters on the underside of the dental prosthesis to accomplish.

Orthodontic mini-implants

In orthodontic patients, dental implants are used to replace

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missing teeth or as a Temporary Anchorage Device (TAD) to aid orthodontic movement by providing an additional attachment point.

Medical uses

Dental implants are most commonly used to support dental prostheses. Osseo integration, a biologic process in which bone bonds securely to the surface of particular materials such as titanium and some ceramics, is used in modern dental implants. Implant and bone integration can sustain physical demands for decades without failing.

CONCLUSION

The implant will be subjected to a certain level of stress during normal function because biomechanical forces exerted during chewing can be high, planning the position and quantity of implants is critical to the prosthetic's long-term health. Implant placement is established by the position and angle of neighboring teeth, lab simulations, or computed tomography with CAD/CAM simulations.

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