

What Complications Can Arise in Dental Implant Procedures?

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Dental implants are titanium anchors that are placed into the jaw bone and which serve to support crowns, bridges, or hybrid dentures to replace missing teeth. They are also used to help retain removable partial or complete dentures.

Successful placement of dental implants is dependent on appropriate evaluation and treatment planning, surgical technique, radiographic analysis and monitoring, and patient management. Surgical complications can arise from any one of these areas, and include pain, swelling, bleeding, infection, bruising, and interference with or damage to nerves and other vital structures. For instance, a failure to properly assess bony anatomy can result in perforation or damage to the maxillary sinus or interference with the inferior alveolar nerve. Violation of the maxillary sinus can result in long term sinusitis and infection, or the creation of an oral-antral fistula - a communication between the sinus and the mouth. Damage to the inferior alveolar nerve can result in permanent numbness to the lip, chin, cheek, teeth, and gums.

While implant success is not guaranteed, a success rate of 98-99% is generally expected in the hands of a knowledgeable and experienced implant surgeon, a surgeon who understands bone biology and anatomy, wound healing, and soft tissue management. Implant failure can be the result of a lack of integration, or fusing of the implant to the bone. This 'early' type of failure can result from infection, poor surgical technique, or poor assessment or treatment planning. The level of integration of the implant to the bone should be objectively assessed before the implant is restored using either reverse torque or the Osstell implant stability quotient.

There is another type of implant failure that occurs later, after the implant has integrated, and is manifested by the implant losing its integration or bond with the bone. This can result from infection, possibly as a result of retained cement from the crown placed on the implant. It can also result from excessive forces placed on an implant not equipped to absorb those forces, such as using a small platform implant or an implant of inadequate length to replace a large, wide tooth, or placing an implant in a poor position relative to the long axis of the tooth resulting in excessive lateral forces, or not taking into account heavy biting forces and compensating for them with a bite guard to protect the implant and the patient's other teeth.

When properly planned and executed, dental implant therapy is a highly predictable and beneficial treatment, allowing patients to replace missing teeth and restore comfort, function, and esthetics. This, in turn, contributes to a state of well-being by restoring self-assurance, better nutrition, and good health. In most circumstances, dental implants are the standard of care in replacing missing teeth.

Avrum R. Goldstein is a periodontist with more than 42 years of experience in clinical practice, and with 30 years of experience in placing dental implants. In addition, he has held academic positions at the State University of New York (Buffalo), the University of Connecticut, and for 15 years at Yale University, as an Assistant Clinical Professor of Surgery at the Yale School of Medicine.

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