Periodontics

Perspectives of Current Ideas, Techniques and Clinical Concepts

in Periodontics, Implants and Restorative Dentistry

Marc. R. Fisher, D.D.S.
Practice Limited to Periodontics, Implantology
13975 Connecticut Avenue, Suite 309. Silver Spring, MD 20906
301-871-7111

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FAILING/AILING IMPLANTS

The longevity of successful endosseous, titanium implants has been well established over the past forty years. Before the use of edosseous implants the history of implants includes other types such as blade implants that were used mainly in the 50s to 70s. These implants were often associated with infection and extensive bone loss. Periosteal implants have a better track record, but have fallen out of use, for the most part.

While endosseous implants have been used successfully for the last forty years with a very high success rate, there are a significant percentage that will fail or develop problems. When the statistics on implants are looked at carefully there is not a 100% success rate. Approximately 5-10% of implants fail. The definition of success can be debated by determining what parameters are evaluated. I am defining success, for the sake of this newsletter, to mean an implant that is clinically osseointegrated, is prosthetically functional and is non-symptomatic enough for the patient to have comfortable use. This, of course, leaves out a significant percentage of implants that have bleeding, inflammation, deep pockets and bone loss.

How and why do these problems occur and what to do about them? Problems develop around implants for several reasons which can be characterized by

occurring in phases. Failure of implants during the healing phase can be attributed to improper surgical technique, inadequate bone volume or excessive occlusal forces (usually under removable appliances). A certain percentage could be attributed to systemic host issues such as smoking, uncontrolled diabetes, etc. The next stage occurs during the initial loading phase. This period could be defined as up to one year. Either occlusal overloading, perioimplantitis or loss of integration where there was inadequate integration before loading. Loss of integration past one year can be characterized by the problems listed during the one year period, but occurring more slowly. Many studies will define a failing implant as having lost more than 1mm of bone after the first year and more than 0.2mm of bone after the second year. In practice, I have followed many implants that have lost this amount of bone or more yet have stabilized over long periods of time (more than 10 years) and remain functional.

The main questions are how to avoid the problems associated with early loss of osseointegration and once integrated how to either prevent or treat ailing implants in order to prevent their failure.

Early loss of integration is mainly a surgical problem, however implants placed under removable prosthetics are twice as likely to fail. Avoiding loss of these implants can be mitigated by careful reduction of occlusal forces by the removable prosthesis during the healing phase. Implant failures over the long run are the most common since those implants have succeeded well enough to be placed into function. Once in function the challenge of maintenance involves careful assessment of the health of the implant. Careful probing is very important. It is often more difficult to probe around implants than natural teeth. This is due to the relatively narrower diameter of the implant resulting in a clinical crown that is bulkier at the gingival margin making probing less accurate. Another difficulty in maintenance revolves around the fact that probing around implants are often 1-2mm greater than those around natural teeth. Determining when there is disease (perioimplantitis) can be difficult. Radiographic bone loss can be deceptive because, as pointed out earlier, horizontal bone loss may have occurred in the past with the implant having reached a stable and maintainable state notwithstanding prior bone loss.

In cases where obvious inflammation, increased pocket depths and bone loss are occurring there must be diagnosis and treatment. Treatment often parallels that which would be attempted for natural teeth. Peri-implantitis has been likened to periodontal disease around natural teeth with similar bacteria involved. Therefore, most treatment regimens begin with mechanical debridement and if necessary use

of antibiotics. If occlusal issues are suspected then they must be addressed first. Surgical intervention is often necessary once measurable bone loss occurs. Differences between natural teeth and implants become more apparent when surgically debriding an implant surface. With a roughened surface and threads to contend with the implant surgery is often more challenging and less successful. In some cases it is necessary to flatten the threads and establish a smooth surface. In cases where lack of keratinized and/or attached gingiva occur the re-establishment of a healthy gingival architecture is often less successful than natural teeth. In the anterior, if esthetics is a concern then covering exposed abutments or implant surfaces may include first rebuilding lost bone support then separately attempting gingival coverage.

In conclusion, those who place and restore implants will most assuredly be facing increasing numbers of failing/ailing implants as time goes by. This is merely a mathematical fact based on increased numbers of implants being placed added to those that are already in use. Better implant design, materials, surgical advances, etc. will need to occur to reduce the percentage of failing/ailing implants in the future.

Next Issue:
The Free Gingival Graft - A Procedure Lost?

Do you have suggestions for future topics?

Call my office or e-mail your ideas.

Questions/Comments Please call during Office Hours

301.871.7111 Mon. Tues. Thurs. Fri. 8 am - 5 pm

E-mail to mperio@msn.com

Web Site www.marcfisherdds.com