implants

From Bridges to Implants
The New Paradigm for General Practice

By Americo Fernandes, DMD

It appears that most general dentists believe that a fixed conventional bridge is still the standard of care today. This belief, however, is no longer true. The paradigm shift is on the horizon for general dentists. We as health professionals must present a more balanced and updated risk-benefit analysis of treatments we administer to enable our patients to continue to receive the healthiest possible treatment. The future should see many more implant treatments replacing single and double missing teeth, and fewer bridges, and these procedures will largely be performed by general dentists. Why? Because this treatment is not difficult to perform, and it offers superior health advantages compared with bridging.

Conventional bridging requires “the optional sacrificing” of the long-term health of tooth structures, resulting in premature tooth loss. Pulp tissue, periodontal health, and structural strength are all irreversibly compromised whenever a bridge procedure is performed. In contrast, implant treatment is far more beneficial to oral health simply by eliminating the problems associated with bridging. The life of the traditional abutment teeth is significantly extended.

The following case demonstrates the use of two implants replacing two missing mandibular teeth. The protocol is consistent with evidence-based dentistry and with risk-benefit analysis that is supported by today’s best research. The case described should be typical and routine treatment delivered by general dentists.

CASE REPORT
A young man in his mid 20s presented to our office wanting to replace missing teeth Nos. 18 and 19. A medical/dental

Figure 1. Periapical x-ray with depiction of length and MD width available for implant placement.

Figure 2. Periapical x-ray depicting the initial exploratory pilot holes to the chosen depth prior to the final enlargement. This step is very important to determine the correct final location of the larger final osteotomies.
Figure 3. Implants are placed in the desired spatial location in the bone. Because this is not an aesthetic zone, the implant's mating surfaces are left slightly supra-crestal to the gingival tissue to facilitate cementation and minimize gingival irritation.

Figure 4. The implants are shown with the cemented crowns in place. Note the beautiful fit and finish of the seated final restorations.

Figure 5. Note the innovative shape of the modifiable post-core. It can be customized with a drill in a matter of minutes. It is designed to accommodate an infinite number of seating paths up to 20° from the long axis of the implants.

Figure 6. Modification of the post-core is performed on a brass laboratory analog.

History was obtained as usual, and it was concluded that the patient was in excellent health. Dental records consisting of models, bite-wings, and periapical radiographs were obtained to help formulate a treatment plan for the patient. Dental models revealed some super-eruption of the opposite teeth into the edentulous area. Enameloplasty to adequately correct the super-eruption was necessary to correct and harmonize for the opposing prospective prosthesis. The models and the radiographs also revealed some tipping of tooth No. 17 into the edentulous area. The periapical radiograph further revealed a less-than-favorable short root structure for a fixed conventional bridge. Significant alveolar bone resorption of the edentulous area was also evident.

From this routine gathering of diagnostic information, a formulation of treatment options was made, and it was concluded that the patient exhibited a less-than-ideal situation for both a conventional bridge and an implant treatment. A balanced, focused assessment, however, revealed that implants could be placed in the edentulous area without bone grafting if the patient so wished. The teeth adjacent to the treatment area showed minimal restorations, and it would be a pity to cut them down and set in motion the premature death of these teeth. The patient's decision was simple. He chose the healthiest and least invasive procedure, which in this case was the implant option.

The patient clearly understood that by leaving his teeth intact, their life expectancy would be extended compared with crown and bridge treatment. Ease of periodontal care is maintained by allowing for normal flossing. The patient understood that the life expectancy of a traditional bridge would perhaps only serve him into his 40s, if lucky. After this period he would likely face the need for a removable saddle-end partial denture or implant treatment, so why not do the implant treatment now and save the existing bone and tooth structure? The clinical protocol is briefly outlined, and represents how such procedures can be performed in general practice.

**CLINICAL PROTOCOL**

Once the decision was made to implant, we proceeded to implant selection and placement. In this case we decided to use an implant system specifically designed for general dentists (Omni-Tight by BASIC). The recommended protocol is a single-stage surgery, and its prosthetics are extremely reliable and easy to perform. The system is restored totally with cement, just like the classical crown and bridge technology we use today routinely to restore single root canal-treated teeth. Examination of the models, physical alveolar receptor bone site, and periapical radiographs were used to determine the diameter and length of the implants. In this par-
ticular case two 4.5-mm, 13-mm Omni Tight implants were selected for treatment (Figures 1 and 2).

The patient was scheduled for a 1-hour appointment. During the first appointment the implants were inserted, and all the restorative records were obtained (Figure 3). In this particular case only 30 minutes were necessary to accomplish surgical insertion and record taking. The patient was given the usual necessary medications and home care instructions, and informed to return at 2 months post-op, unless there were signs of problems as described in the information literature.

When the patient returned at 2 months, the implants were checked for "progressive osseointegration." Progressive osseointegration is determined by physically testing and examining the implants for lack of movement, pain, infection, and intimate implant-to-bone contact around the implant as seen in a periapical film. The implants are allowed to heal uncovered by gingival tissue, thereby allowing quick and direct visual and physical inspection and restoration. The recall appointment usually takes 5 minutes, and if all the criteria check out, we are ready to proceed to the restorative phase.

As usual, the implant restorations were placed in a 30-minute appointment. Remember, all we are doing is
cementing post-cores and crowns to the implants, and this is something with which we are all familiar. The prosthetic records were obtained at the surgical placement appointment, therefore we did not need to take any more records at the recall appointment. We simply directed the laboratory to finish the restorations as per instructions, after confirming progressive osseointegration. Any capable fixed crown and bridge laboratory is readily able to fabricate restorations for this type of implant system. The prefabricated post-core system is easy to customize in the laboratory in minutes with a drill. The cost to customize the post-core system is about $25 per post-core.

Conventional crowns were then fabricated in the usual way. The laboratory costs for this type of implant system are approximately half when compared with a conventional four-unit fixed bridge. A bridge procedure in my practice typically consumes twice as much time compared with implanting.

In addition to the superior health this new paradigm offers, it is time-efficient and financially responsible treatment (Figures 4 through 11).

CONCLUSION

It must be emphasized that evidence-based dentistry requires us to perform a risk-benefit analysis so that informed consent is truly obtained from our patients. General dentists can and must include complete implant treatment in their practices in order to better serve patient health. Most three- and four-unit bridge situations qualify as uncomplicated implant treatment because of the large amount of residual bone available to implant. These types of treatments are certainly within the scope of the very capable and well-trained North American general dentist.

It is extremely important, however, that the general dentist seeks an implant system that possesses prosthetic technology that is reliable and easy to learn and implement into everyday practice. The system chosen must also be profitable and competitive when compared with traditional crown and bridge procedures. All titanium implants possess the ability to osseointegrate in bone. This phenomenon is based on sound and extensive research. Therefore, when considering an implant system for your practice, the most important and desirable characteristic is the prosthetic technology.

References


Dr. Fernandes maintains a full-time general clinical practice with emphasis on implant dentistry in Winnipeg, Manitoba, Canada. He has been actively involved in developing implant systems especially suited for general practitioners. He can be contacted at (204) 339-2675 or dentalimplant@mb.sympatico.ca.

Disclosure: Dr. Fernandes assisted in the research and development of Omni-Tight Dental Implants.