

General Dentistry as a Specialty



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PREFACE

Definition

Dentistry is defined as the evaluation, diagnosis, prevention and/or treatment (non-surgical, surgical or related procedures) of diseases, disorders and/or conditions of the oral cavity, maxillofacial area and/or the adjacent and associated structures and their impact on the human body; provided by a dentist, within the scope of his/her education, training and experience, in accordance with the ethics of the profession and applicable law (as adopted by the 1997 ADA House of Delegates).¹

INTRODUCTION

Dentistry is an evolving art and science which can be a challenging discipline made more difficult if we do not work to constantly elevate our care, skill, and judgment. The 9 “specialties” of general dentistry (as recognized by the Council on Dental Education and Licensure within the ADA) creates these specialties to define areas they feel require additional study or examination to perform at a definable level beyond that of a “generalist.” That being said, the practice of general dentistry and training received in dental school can hardly be sufficient to practice in today’s rapidly changing environment. Even board certified specialists cannot rest on the laurels of their specialty certificate (especially if it was attained several years ago) since the research and advancements in dentistry have been enormous in scope over the last several years. If we, as general dentists, must perform all facets of dentistry and be held accountable (for legal, moral, and ethical reasons) to the level of a specialist within the 9 board certified specialties, then it can be said that we must be specialists within our field.

There is tremendous political pressure to fight licensure by credential, dental implantology as a specialty,² facial cosmetic enhancement with dermal fillers, or cosmetic dentistry as a specialty, to name just a few of the hotbed issues within our field. It is beyond the scope of this article to address these issues; however, to aspire to treat our patient demographic in the most professional and responsible manner, general dentistry should be thought of as a “specialty.” The result of increased continuing education within and beyond the labeled specialty designations will result in a renewed joy within

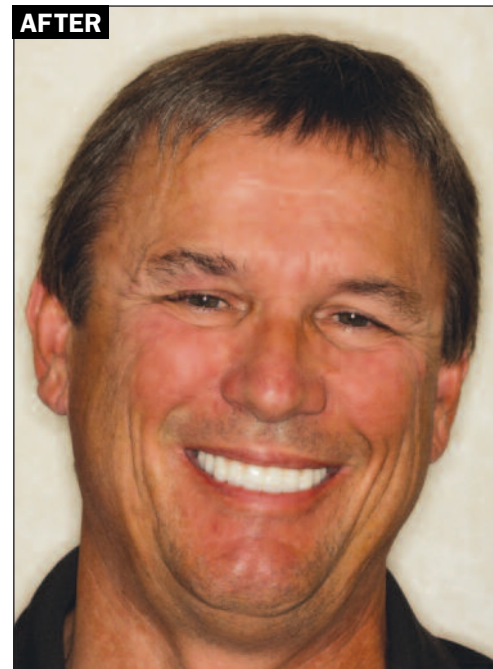


Before Image. Preoperative photo with smile display showing diastemas.

our profession, as well as a deep gratitude within our patient base and strengthened collaboration with our colleagues with board certifications.

The AGD Promotes Quality Continuing Education

The path to mastership within the AGD requires attaining fellowship by taking a vigorous examination as well as training within 13 dental subspecialties with 1,100 hours of continuing education (CE), of which 400 hours must be participation-based courses. This is an award designation and not a specialty, but it highlights the emphasis that organizations such as the AGD places on quality CE. Organizations such as the American Academy of Implant Dentistry, International Congress of Oral Implantologists, and Academy of Osseointegration have all placed an emphasis on CE and have credentialing within their organizations to further the art and science of their discipline. While my father, Charles F. Winter, DDS, could have been grandfathered in as an “orthodontist,” he chose to remain a general dentist with a strong orthodontic emphasis. His argument was that dentistry was just too much fun to limit his practice to just one facet of dentistry. In my opinion, that energy and exuberance is something to which we should all aspire.



After Image. Full-face view after cementation.

This case presentation enumerates the comprehensive knowledge that we must utilize on a daily basis. This illustrates “general dentistry as a specialty” and, while many specialists would argue this case falls within their purview, the author contends that with proper training, education, and collaboration, comprehensive restoration should at least be better understood if not performed by general dentists.³

CASE REPORT

Diagnosis and Treatment Planning

A 52-year-old male presented to our practice with advanced periodontal disease. His chief complaint was that he had pain, and he was also quite self-conscious about his smile. His greatest concern, and he was very emotional about this, was that he never wanted his daughter to see him without teeth.

His full-face photo displays multiple diastemata with a progressive splaying of his maxillary anterior dentition (Before Image). The generalized erythema, edema, and cyanosis of his dentition can be seen in the retracted view (Figure 1). The patient’s preoperative smile demonstrates tooth size discrepancies as well as lip asymmetries (Figure 2). A cosmetic smile simulation (Smile Pix) was performed along with 3-dimensional imaging, photographs, preliminary impressions, bite registration, and



Figure 1. Preoperative intraoral retracted views showing severe periodontal disease.



Figure 2. Preoperative smile.



Figure 3. Retracted view of mandibular arch with teeth prepared for retention of provisional.



Figure 4. Maxillary and mandibular BioTemps (Glidewell Laboratories) provisionals ready for phase 1 surgery.



Figure 5. Delivery of mandibular provisional at phase 1 surgery.



Figure 6. Ridge expansion in maxilla during phase 1 maxillary surgery with prepared teeth to hold temporary.



Figure 7. Postsurgical delivery of provisionals after multiple extractions, immediate implant placement, and socket preservation procedures.



Figure 8. Smile with provisional, after first surgery.

face-bow mounting of the diagnostic casts. The records were sent to Glidewell Laboratories with instructions to create a diagnostic wax-up according to the occlusal and cosmetic enhancements desired. I then had them photograph the wax-up and send me the pictures so that I could make modifications as needed prior to fabrication of the BioTemps provisional restorations (Glidewell Laboratories).

The patient's medical history was non-contributory. The diagnostic wax-up with photographs and cosmetic simulation were presented to the patient for final approval, and after hearing the costs, advantages, disadvantages, benefits, risks, and alternatives, he decided to pursue full-mouth rehabilitation with implants and fixed porcelain bridges.⁴ It should be noted that the diagnostic wax-up allowed us to assess the patient's needs, wants, and desires as well as gauge the methodologies and treatment paths that could satisfy these objectives.⁵ This information allowed us to discuss and finalize the treatment plan, financing, and appointment sequencing.

The preoperative surgical evaluation revealed a few stable posterior teeth that could be used to support a fixed provisional at the time of implant placement. The BioTemps were hollowed out under these teeth by prescription. When dentists understand the psychogenic issues presented by the patient, and they work diligently to address these concerns, the prototypic restorations can go a long way toward establishing trust and facilitating ongoing cooperation with the patient with these

complex treatment cases. Prior to the first incision at surgery No. 1, the lower bicuspids were prepared to retain the BioTemps provisionals. When the mandible was edentulous, the extraction sites were grafted or had implants placed at phase 1 surgery (Figure 3). Preparations are done prior to the surgery so that debris, old alloy, composite resin, and tooth structure won't contaminate the surgical sites. Tapered internal BioHorizons implants were chosen due to their aggressive buttress design and Laser-Lok surface technology, which provided an increased bone to implant contact and high insertion stability.

The maxillary and mandibular BioTemps (Figure 4) established the midline, the curve of Spee, and the curve of Wilson, as well as maintaining occlusal vertical dimension. In addition, they were used to create a favorable mesio-lingualized occlusion. The occlusion, phonetics, aesthetics, and vertical dimension would all be tested in the prototype restoration and finalized later in the porcelain restorations. If preplanning allows for retention of pier abutments, then stable temporaries can protect areas that require prolonged, undisturbed healing. This includes protection of block grafts, guided tissue regeneration, sinus augmentation, or socket regenerative procedures.

The mandibular provisional was then delivered (Figure 5). The intaglio of the provisional was hollowed out under the retained teeth by prescription, and metal reinforcement was used to preserve rigidity and the strength of the BioTemps bridges. Osteotomes for ridge spreading were used in the maxillary

ridge to facilitate strategic implant placement (Figure 6). The maxillary and mandibular BioTemps were delivered after the first surgical visit, and 4 maxillary and 4 mandibular teeth were used as pier abutments for these provisionals (Figure 7). The provisionals' intaglio was relined and cemented with a resin-based temporary cement (TempBond Clear [Kerr]) during initial healing.

The patient left the initial surgery with confidence and pride and was emotional when his smile was unveiled (Figure 8). The difficult portion of the case, which was the cosmetic uncertainty, had been assuaged. This was facilitated by careful and detailed communication with the dental laboratory team. The incisal edge position, tooth size, shape, and mold and shade were discussed and also supported with information from photographs, cosmetic imaging, mounted models, and the diagnostic wax-up. This thorough communication process facilitates the overall desired aesthetic outcome and would become the blueprint for this case.

The second surgical appointment for the maxillary arch occurred after implant integration. The remaining maxillary teeth were removed and immediate implant placement was accomplished where possible. The BioHorizons internal implant threads provide high insertion torque values and are aggressive in nature, which facilitates ideal placement. The extensive socket size and pathology required that socket preservation be performed prior to placement of implant No. 6. The implants that were placed in the first surgery were uncovered, and PEEK temporary abutments (BioHorizons) were

placed. The maxillary provisional was hollowed out in the area of the temporary abutments and retrofitted for added stability and support (Figure 9). At stage 2 surgery for the mandible, the 3inOne BioHorizons standard abutments were placed, and the provisional was retrofitted so that the remaining mandibular teeth could be removed and immediate implants and graft material placed (Figure 10). This would facilitate tissue maturation and recontouring. After 6 months, all of the implants were well integrated and PEEK temporary abutments were placed along with a new provisional to finalize the tissue prior to master impressions (Figure 11).

This sequential approach to treatment allowed the patient the comfort and convenience of maintaining fixed provisionalization during the prolonged healing period. This technique affords the implants the benefit of progressive loading as well. Teeth that need to be removed, but have no mobility, can be used sequentially during prolonged treatment to improve the outcome of implants and grafts. They can also decrease the chance of suture line opening or abrasion of freshly surgerized areas. The use of small-diameter implants in combination with teeth can also allow patients to avoid dentures as temporaries in some instances. If small-diameter implants are to be used for added support and the position can't be determined prior to surgery, the BioTemps can be prescribed already hollowed out and relined at the time of surgery.

Impressions of the temporary abutments were used to create a secondary provisional to further develop the tissue maturity as well as finalizing aesthetics, phonetics, vertical dimension, neutral zone, and verification of function. The use of a template or prototypic restoration will allow the lab to make cores, a custom anterior guide table, soft-tissue model, and will greatly diminish aesthetic concerns prior to fabrication of the final porcelain bridge. The new provisional was fabricated along with cast custom abutments and a metal framework. These abutments, along with the delivery of a new provisional, would help to manipulate tissue and allow for a pickup impression of the metal framework to capture final soft-tissue contours prior to a bisque bake try-in of the maxillary and mandibular prostheses (Figure 12). When all abutments were delivered and their fit was verified radiographically, they were torqued to 30 Ncm and the provision-

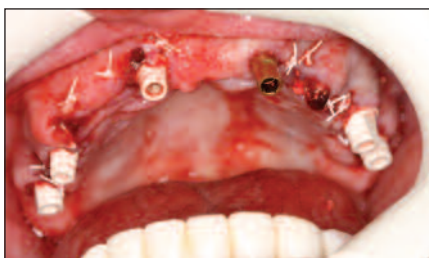


Figure 9. Maxillary arch with temporary abutments placed after removal of remaining teeth and grafting.



Figure 12. Custom abutments placed in the maxillary arch prior to cementation of maxillary bridge.



Figure 15. The newly cemented lower bridge with the second maxillary provisional for finalization of the tissue and bite. This was worn while the upper bridge was fabricated, the metal tried-in, and occlusion finalized.

als allowed the tissue to heal. The mandibular bridge was tried-in and seated against the maxillary approved bridge in its bisque bake form. Once the aesthetics were approved, the lower bridge was cemented. This allowed the dental laboratory team to fine-tune the occlusion of the maxillary prosthesis, and to make any modifications to the maxillary bridge prior to its definitive cementation.

The aesthetics, phonetics, and contours that had previously been worked out in the 3 sets of temporary restorations were evident in the definitive mandibular bridge (Figure 13). The tissue in the maxillary arch was extremely healthy, and the abutments were retorqued to 30 Ncm prior to cementation of the maxillary bridge (Figure 14). Prosthetically driven, patient accepted, maxillary provisionalization was the blueprint for the mandibular prosthesis, the maxillary prosthesis, the occlusion, the phonetics, and aesthetics of the case (Figure 15).

The retracted view of the maxillary and mandibular fixed bridge-work demonstrates the culmination of careful maintenance of vertical



Figure 10. Mandibular arch showing teeth that were used to hold provisionals with implants placed prior to removal of their standard abutments.



Figure 13. The definitive PFM bridge cemented.



Figure 16. Retracted view of maxillary and mandibular PFM bridgework with pink porcelain.

dimension of occlusion through utilization of successive provisional restorations (Figure 16). The relaxed smile closeup reveals a beautiful integration of tooth form with function (Figure 17). When the patient was asked to smile for the portrait "finale," he was exuberant and reported that the restorations felt natural and allowed him to accomplish lip patency without effort (After Image).

The before and after cosmetic simulation that was our preoperative target always comes with a disclaimer that actual results may not exactly match the simulation. Careful attention to treatment planning and laboratory communication allowed us to match, if not exceed, the simulated goal (Figure 18). When patients have the opportunity to live with their well-made temporary prostheses, they can give feedback that will serve to ensure the final prosthesis will satisfy their expectations prior to undergoing costly remakes or rebakes of the final porcelain.

DISCUSSION AND CLOSING COMMENTS

How many disciplines of dentistry were involved in this patient's care? The answer is undoubtedly, all of them. It is a



Figure 11. Mandibular arch with abutments (PEEK Abutments [BioHorizons]) placed.



Figure 14. The retracted view of the upper Atlantis abutments over the lower bridge.



Figure 17. Final smile with bridges cemented.

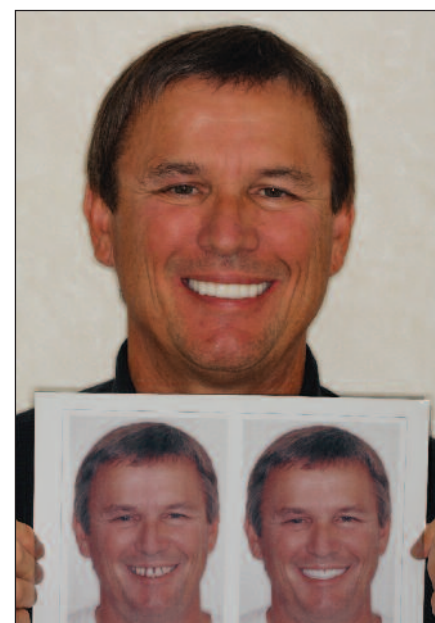


Figure 18. Postcementation comparison of preoperative condition and postoperative result with cosmetic simulation.

responsibility of each clinician to ask the questions: (1) Could we have saved his teeth with periodontal surgery, orthodontics, endodontics, and prosthodontics? (2) At what point have we watched this patient for too long? (3) Should we consider implants while they still have the bone necessary to retain

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implants without extensive grafting, or should we preserve each and every tooth without regard to time, cost, and patient desires? These are a few questions that we all struggle with everyday in complex treatment sequencing. As “specialists,” we have to develop a philosophy that guides our care, skill and judgment with evidenced-based scientific support. We must also be practice management experts and do this within the budgets presented to us through frank discussions of what patients want and can realistically afford.

The average general dentist may not want to become involved in complex restorative dentistry but he or she should recognize and understand it. This article highlights the ability we have to perform any level of dentistry, within the scope of our training, education, and experience.³ Without a comprehensive understanding of the steps involved, we may preclude our patient base from understanding or accepting this level of care.

Patients are treated with partial dentures and dentures for decades, and this may be the only option available to segments of our patient population from a financial perspective. The sequelae of long-term partial and complete denture wear have been extensively published. The dentist who has to make the lower complete denture for the 70-year-old woman for her fifth set of dentures has a daunting task in front of him or her. If we become engaged in foundation preservation and comprehensive treatment planning in early edentulism, we can create healthier patients and enjoy the improved patient satisfaction and resultant financial benefits to our practices. The purpose of this dialogue is to challenge and invite general dentists to become more fully engaged in their education. The reinvigoration that is felt with CE can lead to changes in personal and professional para-

digms that will result in long-term successful dental practices. In speaking with our patients about sequential treatment and upgrade paths⁶ we can become the quarterbacks in our practice and with conscientious training we will become specialists in our profession—general dentistry.♦

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Suggested Readings

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Dr. Winter has authored several articles on upgradeable dentistry and related topics. His lecture topics include, “General Dentistry as a Specialty,” “Upgradeable Dentistry,” and, “How to Recession Proof Your Practice.” He is a consultant for Dental Health Libraries, a nonprofit Internet based health library. He can be reached via the e-mail address rick@winterdental.com.

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