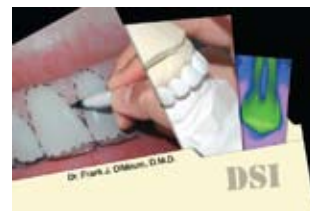


# Like the CSI Team, Dr. Frank J. DiMauro Performs a Comprehensive Dental Evaluation

**L**ike the detective work of the investigators on the CSI television series, attention to detail is the hallmark of a comprehensive dental evaluation. Much is learned during a conversation between you and Dr. Frank J. DiMauro prior to the examination of your mouth. He wants to know about your past dental experiences, expectations, and concerns in order to help you best. Then comes a thorough oral examination.

This meticulous examination involves much more than your teeth. A thorough examination involves the head and neck muscles, jaw joints along with gum

tissues and supporting bone. All of these areas hold clues that aid Dr. Frank in diagnosing current conditions and predicting future problems.



The teeth are like fingerprints. Dr. Frank detects a lot of information from wear patterns and signs of mobility. He uses x-rays and other imaging, photography, jaw measurements and molds of your teeth to reenact what has happened, is happening

and will likely happen to your dental health if left untreated.

The molds of your teeth are used to create models. On these models, Dr. Frank tries out possible dental treatments to see what will work best.

Like the CSI team, Dr. Frank and his dental staff combine their talents in collecting information. Dr. Frank analyzes all the information to determine your treatment options and formulate a recommended course of treatment that will appropriately meet your needs.

*For more information or to arrange for a free consultation please call the Dental Office of Frank J. DiMauro, D.M.D. at 978-777-9959.*

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## CASE STUDY

### Multidisciplinary Treatment

By William Bebrin, DMD, DMSc and  
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Middleton, MA



### INTRODUCTION:

Excellent dentistry has always begun by developing a thorough and accurate list of the patient's problems, leading to a sequential treatment plan incorporating the patient's wishes, and the technologies available at the time. The requisite treatment procedures are then delivered with a high level of skill (craftsmanship and artistry). As treatment progresses, the plan is refined or modified as new information is obtained. Post-treatment follow-up is used for suggesting ways to improve therapeutic procedures.

With complex cases, requiring the involvement of multiple dental team members, the requirements for a successful outcome become exponentially greater. As the number of therapeutic interventions increases so does the need for communication between the dental team members. These dental team members include the restorative dentist, specialists and lab personnel as required. Since dental procedures are not completely predictable, plans may need adjustment and these changes must be communicated to the relevant team members.

The following is a case in which a coordinated multidisciplinary approach was used to treat a patient with a complex set of dentofacial needs. This article is not meant to be a "how to" for such cases, but rather a case report of how one patient benefited by the co-operation between a team of dental professionals.



### PRETREATMENT EVALUATION:

The patient initially met with Dr. Frank DiMauro (restorative dentist) for an exam and patient interview to determine his goals of treatment. The patient was aware that he had a variety of functional and esthetic problems. He desired a comprehensive approach addressing his problems. Time, esthetics during treatment, and cost were also issues for him. Diagnostic records including mounted study models, radiographs and photos were obtained. Prior to referral, the case was discussed with the dental team to determine the envelope of treatment options available. Subsequently, the patient was referred to Dr. William Bebrin (Orthodontics), Dr. Larry Miller (Periodontics and Implants), and Dr. Bart Blaeser (Oral Surgery) for evaluation.



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Post-evaluative discussions between the team members were used to refine the list of treatment options for case presentation. Dr. DiMauro presented the treatment recommendations and alternatives to the patient. The patient agreed to proceed with the recommended treatment plan.

#### DIAGNOSIS:

It was apparent from the patient's diagnostic records that he had a variety of dentofacial problems potentially benefiting from a multidisciplinary approach. Facially, the patient was an adult with severe mandibular retrognathia, maxillary hypoplasia, a short lower face height, and convex profile. He had a maxillary occlusal cant and displayed a marked asymmetric smile. Occlusally, he had a C-II malocclusion displaying excess overjet and an impinging overbite. Dentally, teeth 4, 5, 12, 13 and 29 were missing. Primary teeth A, J, and T were present and displayed marked root resorption radiographically. All third molars were present in the dental arches. There was maxillary spacing including a 3 mm maxillary midline diastema, attrition of the anteriors, and a maxillary anterior tooth size deficiency (Bolton) deficiency due to small maxillary incisors. The patient had a history of problematic snoring. There was a deviated nasal septum, inferior turbinate hypertrophy, and antral mucous retention cysts.

#### TREATMENT PLAN:

The treatment plan consisted of orthodontics for managing the spacing and dental malalignment. A combination of implant and orthodontic space closure would be used to correct the agenesis problems. All lower spaces would be closed but upper spaces were to be closed partially to allow subsequent placement of single idealized premolar crown bilaterally. Prior to initiation of orthodontics the oral surgeon was to extract #20 and #T. Subsequent to closure of the #5 space, the periodontist was to extract A and J, preform a sinus lift and immediately place single implants bilaterally.

Orthodontics was planned to prepare for orthognathic surgery and finalize the occlusion post-surgery. Orthognathic surgery would address the patient's facial problems in the anteroposterior and vertical planes of space while concurrently addressing the deviated septum and turbinate hypertrophy. The mandibular Curve of Spee was to be maintained prior to orthognathic surgery to optimize the increase in vertical face height concomitant with the relative anterior positioning of the mandible. Subsequent to orthognathic surgery the occlusal planes would be leveled and the anticipated lateral openbites closed. Temporary crowns and orthodontic pontics would be used to hide the missing tooth space during and following orthodontic treatment. Post orthodontics, the placement of restorations would wait until the patient switched to part-time wear of acrylic retainers allowing for settling and controlled orthodontic relapse (such as diastema reopening). Prior to placement of final restorations new records would be taken to reassess the need for veneers and crowns.

#### DISCUSSION:

The patient described here presented with a host of dentofacial problems requiring a multidisciplinary approach. The patient desired an ideal outcome, but imposed significant constraints regarding cost, esthetics during treatment, and the need to dovetail treatment with a planned move to Florida.

The outcome proved to be satisfying to all parties involved. Several treatment planning decisions warrant discussion. The decision to limit the use of implants to two upper implants, was dictated by cost considerations and the difficulty achieving esthetic interdental papilla between adjacent implants. A non-orthognathic plan utilizing two implants each in the upper and



lower would have allowed correction of the occlusion, but not help the patient's facial disharmonies. In contrast, orthognathic surgery in conjunction with placement of four upper implants in the upper and no lower implants would maximize the beneficial facial changes but would present significant dental esthetic and occlusal compromises.



The upper extractions and implant placement were performed during orthodontics but subsequent to #B space closure to help address the patient's concerns regarding the adverse esthetics of spacing during and following treatment.

For facial reasons, the occlusal planes were not leveled prior to surgery. The patient originally presented with total and lower face height deficiencies. Maintaining occlusal planes presurgically allows for greater vertical facial height change for each increment of horizontal change, compared with the traditional approach of leveling these planes presurgically. Presurgical leveling does permit a better occlusal relationship immediately post-surgery with a shorter finalization phase. Additionally, since most of orthodontic movements are completed prior to surgery, the orthognathic treatment planning is somewhat easier and more predictable with presurgical leveling. Since maximizing facial height changes was a goal of treatment postsurgical occlusal plan leveling was elected.



As it was, the patient moved to Florida during the post-surgical orthodontic finalization phase and prior to completion of postsurgical leveling. After discussions between the patient and members of the dental team members, it was decided to cut short the orthodontics and to address the remaining treatment including the openbites restoratively. The case was to be waxed up to ideal occlusion (in collaboration with Bob Cohen, ADT Dental Lab), with indices constructed and used to place provisional composite buildups. Subsequently, the case would be reassessed and the composite restorations would be replaced as needed with veneers and crowns. Provisional composite restorations were used so that esthetic and stability elements could be assessed over time prior to placement of definitive restoration. Subsequently, definitive restorations would be placed. Now, more than two years since placing the original provisional restorations, the occlusal relationships remain stable and the patient is very happy with the results. The next step, contingent on financing, will be to reevaluate the case, especially with regards to anterior esthetics, and place the remaining definitive restorations.



The North Shore community is fortunate to have an abundance of talented and committed dentists. Working individually we bring our patients marked enhancements in their dental health. Working together we are able to reach higher levels of dental care. The successful treatment of complex cases require even greater integration of care. Complex treatments requires not only careful record taking and sequential treatment planning between the dental team members prior to initiation of treatment, but also continued communication, reanalysis and retreatment planning throughout treatment. Ongoing communication between the dental team cannot be underestimated. Once care is complete, systematic post-treatment follow-up is important to determine the longevity of our best efforts and to suggest technique improvements.

By collaborating in the care of our patients we often can achieve better results than working in isolation. Together we are better than the sum of our individual abilities.