

DSI:



CASE STUDY

Interdisciplinary Case Study

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Introduction

Complex dental cases can be overwhelming and difficult to manage. Continuing my dental education at Dr. Peter Dawson's Advanced Concepts, The Pankey Institute and Dr. Frank Spears Seattle Institute has provided me with the tools and philosophy to treat these patients. Obtaining a thorough set of diagnostic records from which a detailed problem list and sequential treatment plan can be formulated is the first step in providing comprehensive dentistry. This process has been linked to a crime scene investigation. I use the analogy, dental crime scene investigation (DSI) as an office logo.

Involving an interdisciplinary team of specialist in treatment planning prior to starting treatment has proven very beneficial. When I encounter a difficult case, I analyze the study models, photographs, and x-rays. I wax up the case into an idealized result. I will invite specialists from all the dental fields to meet as a group to discuss the options for achieving my treatment goals.

Patient Findings



Fig. 1



Fig. 2

This is a case of a 40-year-old woman complaining of a bad bite and missing teeth. (Figure 1 and 2) Examination of the patient and diagnostic records revealed a mutilated dentition with missing teeth #19, #29, #30 and #31 leading to concomitant shifting of adjacent and opposing teeth. The patient reports she has been missing teeth for years. The

patient displays mandibular retrognathia with a mild brachiocephalic facial pattern. Upon smiling the patient displays 2mm of gingival but obscured her upper incisal edges with her lower lip. At rest, she displayed 5mms



Fig. 3



Fig. 4

of her central incisors. There was an apparent dentoalveolar cant. The TMJs presented with asymptomatic lateral pole clicks. The patient displayed an angle Class-II malocclusion with an excess overjet and impinging overbite. Teeth #3 and #4 were severely hyper-erupted and #18 and #32 were mesially inclined. The incisors were hyper-erupted and very retroclined. Tooth #12 had a compromised root canal without final restoration. Older

amalgams were present. Periodontally, the patient had a mild non-progressive periodontal disease with generalized 2-3 mm pockets and areas of 1-2 mm gingival recession.

Treatment Plan

A meeting of our team for this case was convened consisting of myself the primary care dentist, two orthodontists, Dr. William Bebrin and Dr. John Pavlo, an endodontist, Dr. Luis Chamorro, an oral surgeon, Dr. Bart Blaesar, and periodontist, Dr. Lawrence Miller. The patient was presented briefly for evaluation purposes. After thoughtful consideration of the case and the patient's wishes, a comprehensive and sequential treatment plan was developed. The plan was to use extractions and implant-assisted orthodontic treatment with subsequent fixed prosthetic tooth replacement to improve the bite, to enhance anterior esthetics, and to re-establish the patient's posterior occlusal table. Specifically this plan entailed extracting #12 and the hyper-erupted #3 and #4. The #12 and #3 space would be closed orthodontically to facilitate overjet improvement. Implants for teeth #19, #29, #30, #31

and the #4 would be placed for eventual prosthetic replacement and to assist uprighting of #18 and #32.

Treatment Alternatives

The team also considered alternative treatment approaches. Consideration was given to utilizing orthognathic surgery for addressing the dentofacial issues related to the patient's underlying skeletal relationships. Discussed was the use of a mandibular bilateral sagittal split advancement osteotomy with or without a maxillary LeFort osteotomy with a differential lateral impaction (to address the occlusal cant). Benefits of such a treatment could be a faster, more idealized result with potential facial and soft tissue enhancements. However,



Fig. 5

approach of reducing the occlusals of these teeth and subsequent crown lengthening, root canal treatment, post and core, and crown was ruled out due to the severity of the hyper-eruption. Orthodontic intrusion was ruled out because of time and unreliable correction. Today, orthodontic intrusion using temporary anchorage devices might be considered. Surgical segmental intrusion was ruled out due to the risk of limited collateral blood supply to such a small segment. The patient did not want surgery.

Treatment Course

Dr. Bebrin began orthodontic treatment December 2002 (Figure 3,4,5). During the next 2 months Dr. Miller extracted #3,#4 and #12. 3I implants were placed for #19,#29,#30 #31. In August 2003 custom abutments and lab fabricated temporaries with orthodontic brackets were placed to assist molar uprighting of #18 and #32. A removable anterior biteplane and intermaxillary Class-II elastics supplemented the fixed orthodontic treatment because of the anticipated difficulties in correcting the deep bite and disto-occlusion in an adult patient with this facial type. In May 2005, after the needed orthodontic space closure was complete a 3I implant

this approach was declined by the patient because of issues related to risk, discomfort and costs.

Several options for correction of the hyper-erupted #3 and #4 were discussed.

The 'classical'

was placed for tooth #4. In August of 2005, the patient was debonded and given vacuform clear retainers. The patient was subsequently transitioned to part-time wear of clasplless acrylic retainers only



Fig. 6

to allow settling. After presumptive settling, crowns were placed on the implants. The dental laboratory was Advanced Dental Technologies of Stoneham (Figure 6-9) Cosmetic bonding of the front teeth was utilized to close a small diastema



Fig. 7

and improve the interdental midline relationship. The patient is being monitored periodically and continues to be happy with her treatment and to have the corrections well maintained.

Summary

This case demonstrates the benefits of having a group of specialists meet together with the general dentist to discuss treatment options and to formalize a comprehensive sequential treatment plan when treating complex cases. Instead of sub-contracting out procedures and leaving the patient caught between



Fig. 8



Fig. 9

the dentist and the specialist, the entire team and patient are all on the same page. When we meet as a group, the exchange of information is much more dynamic and mutually beneficial than meeting individually. Furthermore, the information and insights gained meeting to discuss a specific case can often be applied to other future cases. By defining the individual treatment responsibilities of the general dentist and the specialist, the treatment is coordinated, goes smoother and is more predictable.

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

Like 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.



DENTAL SCENE INVESTIGATION

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