Treatment planning comprehensive dentistry

Correcting underlying functional problems is essential for impressive results when performing cosmetic procedures, says Dr Buckle. Listen to Dr Buckle talk on this in more detail at Clinical Innovations Conference on the 16th May 2009’. As well as various seminars with One Consulting and the Dawson Academy.

Many patients who present seeking cosmetic dentistry have underlying functional, structural and biologic problems. If either the aesthetic desires or functional needs are not met, the sequelae can be extremely traumatic for all concerned. Typically these patients have been drilled and filled over the years and often exhibit signs of tooth surface loss (attrition, erosion, abrasion, for example). A more comprehensive approach is required than the single-tooth dentistry which is customary, but where do we start? Here we consider the steps required by reference to two patients.

Where do I begin?

Our first goal is to understand our patient’s wishes. Richard wanted a nice smile. He is a successful business man and was now very concerned about his appearance. But he was also somewhat concerned that he had two teeth that had been accessed for root canal therapy but wouldn’t settle, had numerous teeth that kept breaking and was aware that he ground his teeth and often woke with sore facial muscles and a muggy head.

Jenny had had problems with her periodontal condition for some time. She had already lost several teeth and many of her remaining teeth were heavily restored. Her main desire was to keep her teeth—and if possible, have some put back. At the same time, she related that she had never had a nice smile and if that was possible she would be very happy.

What Am I Trying to Achieve?

Accessing the patient’s wishes provides invaluable information in helping us determine what we are trying to achieve. Most importantly we need to have a vision of the desired result – what does a healthy, stable, attractive mouth look like?

Combining the patient’s desires with these goals will produce beautiful, long-lasting, comfortable, predictable results.

Start at the beginning

Whatever the presenting condition or our patients’ desires, it is essential that we have a records process in place that will allow us to carry out a comprehensive examination so that we may use that information to determine what problems the patient has and how we may help them. Digital photographs are not only an essential record but also an excellent aid in cadiagnosis, helping the patient see and understand the problems that they may have.

It is important to be consistent in the photographs that are taken and in the camera settings that are utilised. Additional shots may also be taken to help illustrate specific points.

Impressions are taken being careful to record all the teeth and sufficient tissue detail. Alginate is still an excellent material, although if questioned the model is cast promptly. I will often use polysilicon silicone (PVS) materials in a quick two stage putty wash technique that I find helps record all necessary information with the added advantages of stability and the potential to recast.

An earlobe is taken so that the models can be mounted onto an articulator. This relates the upper cast to the condyle, records the occlusal/incisal plane and provides the correct arc of closure for the lower cast.

TMJ/occlusal examination

The goals of the TMJ/occlusal examination are to assess the health of the joints and determine if occlusal therapy is needed. It is also important to assess the level of parafunctional activity that is occurring. A thorough history is taken, appropriate muscles are examined for signs of tenderness and range of motion is noted. Centric relation load test is performed using bimanual manipulation. Doppler ascultation or joint vibration analysis is also useful. The dentition is evaluated for signs of instability – wear, mobility, migration, for example.

The last piece of information required to mount the casts to a semi-adjustable articulator is a bite record which relates the lower cast to the upper cast. Again bimanual manipulation is used to achieve centric relation (CR) and the record is taken with wax (Deltar, Great Lakes Orthodontics) or vinylpolysiloxane (futar D, blue mousse). If it is difficult to manipulate the patient, a Lucia jig may be first used to de-program the muscles. When the patient has relaxed, it will be possible to record the bite utilizing the jig in combination with bimanual manipulation.

Biologic assessment

The periodontal condition is recorded and an oral cancer check performed. The teeth are examined for signs of decay and failing restorations. Any necessary radiographs are taken.

Case planning and delivery

Once all desired goals have been gathered, we can now analyse the information and develop a treatment plan.

Visualisation

The first step in this process is to develop a mental image of our optimum result. It is important to focus on the possibilities and not to be constrained by the restrictions that are often placed upon us.

Model work

Careful analysis and diagnostic waxing of the mounted casts will produce the 3D image of the mental picture we developed above.

Temporisation

Once the records have been recast. The first step in this process is to develop a mental image of our optimum result. It is important to focus on the possibilities and not to be constrained by the restrictions that are often placed upon us.

Once the implants became integrated, the lower teeth were whitened. The lower anterior teeth were restored and at the same time the upper teeth prepared and temporised according to the diagnostic wax up. The provisionals were adjusted for function and aesthetics.

Once all desired goals were met, photographs, impressions, bite record and earlobe were taken of the provisionals. The technician can then ‘reverse engineer’ the final restorations so that nothing is left to chance.

Richard’s case

Richard’s examination revealed that, in centric relation, his initial contact was on the upper left first molar and lower left first molar – the teeth which had been accessed for root canal therapy but wouldn’t settle. He had mild periodontal disease, several fractured teeth and numerous failing restorations. Preliminary treatment involved initial therapy with the hygienist and three teeth were investigated, and temporised. A splint was provided and root canal treatment was performed on the upper and lower first molars. These teeth then settled unwarranted. Richard had no signs of instability.
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Dr IAN BUCKLE

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