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 businessman 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 coidagnosis, 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 not to record all the teeth and sufficient tissue detail. Alginate is still an option, but as the model is cast promptly, I will often use polysiloxane (PVS) materials in a quick two stage putty wash technique that I find helps to record all necessary information with the added advantages of stability and the potential to recast.

An earbow is taken so that the models can be mounted onto an articulator. This relates the upper to the lower cast, 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 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 bimanaul manipulation. Doppler acoustulation or Joint Vibration Analysis is also useful. The dentition is evaluated for signs of instability - wear, mobility, migration, for example.

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

Model work

Once the records 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.

Temporisation

Careful planning and fabrication of temporary restorations are required to provide patients' expectations. Once the temporary restorations are perfected it is time for us to produce predictable, stress-free results.

Case planning and delivery

Once the temporary restorations are perfected, we can now make a decision on the type of restoration and begin the construction of the final crowns.

Jenny's case

Records were gathered as described above. The patient's joints were stable and healthy. As signs of occlusal instability were present it was decided to work in centric relation. Preliminary model preparation involved extracting several teeth that were beyond redemption and intensive periodontal treatment. Two carious teeth were cleaned and temporised. An opti- mum result was visualised and then waxed up on the models according to the desired goals.

Once the periodontal condition was stable, implants were placed in the upper left first molar and both lower first-molar areas. Gingival, restorations were also carried out at this stage. The upper teeth had failing restorations, were structurally changed and needed to be repro- sitioned slightly for functional and aesthetic improvement. To achieve our aims, it was decided that the upper teeth should be restored. The lower teeth were in generally good order but the patient wished for them to be whitened and the incisal edges of the lower anterior teeth needed to be reshaped to improve function and esthetics. It was de- cided that the lower teeth should be whitened and reshaped/restored using composite.

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

Once all desired goals were met, photographs, impressions, bite record and earbow 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 frac- tured teeth and numerous failing restorations. Preliminary treat- ment 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 unevantfully. Richard had signs of instability.
ity and to fulfil both his aesthetic desires and dental needs we would need to provide numerous restorations. Therefore, it was decided to work in centric relation. Optimum treatment was visualised according to desired goals and then a diagnostic wax up was created.

Preparation was carried out according to structural requirements and in line with matrices derived from the diagnostic wax up. Provisional restorations were placed again using matrices derived from the diagnostic wax up. The provisionals were then adjusted to ensure that all functional and aesthetic goals had been met. Photographs, impressions, bite records and earbow were taken. The technician was then able to copy all parameters and add his artistry to create the final result.

How do I achieve success?

A definition of success is: ‘The achievement of something desired, planned, or attempted’. By having definite goals at planning, preparation, provisionalisation and placement success is much more predictable. Ultimately having patients who are comfortable, functioning well and extremely pleased with their result will be our defining test. I am often asked what is the most important piece of equipment to buy. In my view the answer is simple – invest in YOURSELF! Without knowledge no piece of equipment can save us. Commit to being a lifelong student and enroll on a comprehensive education programme such as that provided by the Dawson Academy. Knowledge is power!

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Dr. Buckle qualified from Liverpool University in 1985. He has over 20 years experience in general practice both in the private sector and with the National Health Service. The first International Faculty Member of the Dawson Academy, he has completed every level at the Dawson Center for Advanced Dental Education in St Petersburg, Florida. He has worked as a teaching assistant with Dr John Cranham in Virginia, USA and in the UK. He has achieved Masters level in aesthetic dentistry with the Rosen- thal Institute based at New York University and now works with the Institute as a senior clinical instructor in London, New York and Palm Beach. He is a published author, sought after speaker and has appeared on radio on numerous occasions. Dr Buckle now runs a private practice with his partner Dr Liam McGrath concentrating on comprehensive aesthetic and implant dentistry. He will be talking at the Clinical Innovations Conference on the 16th May 2009 at the Royal College of Physicians, Regents Park, London. Call 020 7400 8989 for more information and to book your place. Dr go to www.clinicalinnovations.co.uk

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