Computerised imaging

Joe Oliver discusses the importance of computerised cosmetic imaging in treatment planning of the aesthetic case

So what is computerised cosmetic imaging? Putting it simply, it is the digital manipulation of a photograph to simulate changes in form and colour of the teeth. Imaging allows yourself, the patient, specialists and the technician to visualise the proposed treatment. It is an excellent way to co-diagnose with the patient the proposed smile design. Remember that many of our patients are self-conscious about their smiles and find it difficult to discuss them. Using imaging, the patient is able to visualise various treatment options.

To the dentist, imaging is an invaluable tool to visualise slight changes within the parameters of smile design to see if such changes “suit” the overall look of the patient and fit their personality. This could relate to changes in incisal length and width or comparing changes in embrasure spaces. Providing a printed picture at consultation allows the patient to discuss the proposed smile design with their partners and members of their family.

Once the design has been decided upon diagnostics need to be made. Again the imaging picture is a very useful communication tool with the technician to visualise the end result one is aiming to achieve.

Case Example

The replacement of two units in the upper labial segment is probably one of the most difficult challenges in cosmetic dentistry today. It poses both difficulties for the ceramist as well as the clinician. Communication of shade has in the past been a major problem but fortunately nowadays laboratories are able to see patient digitally to alleviate this communication problem. Obviously shade is not the only consideration. Shape, contour and surface texture also play important roles. This is where the cosmetic imagery is so important. In many instances multiple visits are required to achieve a successful outcome.
Consultation

A young 21-year-old lady attended the clinic requesting the replacement of existing bonding on UR1 and UL1. The bonding had been originally placed several years before, and has had to be replaced a number of times due to breakage. The bonding in place was two years old. The patient was unhappy with its poor colour match, it being chipped and general texture. She was also worried as regards the thinning of her incisal edges.

Clinical Stages

Computer imaging: At the consultation, patients are encouraged to discuss their cosmetic dental problems as well as their general dental health. The appointment is one hour long and a good half of this time is taken by the patient talking and myself listening.

Once I have determined the overall aims of the patient, the imaging is carried out in all about 20 minutes. This is undertaken with the patient by my side, so they can give their design input, under my guidance.

A realistic image must be produced which can be achieved clinically. The patient must also realise that the picture is a simulation and the end result would not be an exact match. The image is then printed as part of the treatment plan and also sent to the lab as a guide for the fabrication of the diagnostics.

Preparation: At the preparation appointment the patient was shown the diagnostic wax-up which met with her approval and matches the imaging. The preparation stent was at this stage placed over the teeth to be prepared and any pre-recontouring needed along the lines of the APR/APT technique described by Gurel. Aesthetic pre-evaluative temporaries were then placed.

Once depth grooves were
placed and the incisal edge reduction achieved the temporaries were removed and the grooves joined to produce a uniformly prepared surface.

The gingivae was retracted using cord followed by Expasyl. After two minutes the Expasyl was thoroughly washed off and a full arch impression was taken.

After such records were taken, an antiseptic agent was liberally applied to the preparations as well as a primer to seal the dentinal tubules. This acts as a desensitiser and prevents micro leakage.

Provisionals were then placed. These prototypes allow the patient to assess the shape of the final restorations and if any adjustments need to be made they can be implemented prior to the fitting of the final restorations. Final photographs and alginate impressions were taken of the prototypes.

The Fit Appointment
After the patient has been anaesthetised the provisionals are removed using a Mitchell’s Trimmer. At this stage the veneers were tried in to check the fit and also to ensure the design of the provisionals had been duplicated and everything matches the original imaging picture.

The patient at this stage is asked to comment. I seat the veneers altogether as this tends to be less complicated. I tend to review my patients several days later to ensure gingival settling and to see if adjustments need to be made.

Conclusion
Cosmetic imaging is something that can be easily integrated into many practice environments. It is a tool that is not a substitute to other diagnostic methods but an invaluable adjunct to them. It has been shown to increase patient acceptance of treatment plans. In this case example, you can see it accurately depicts the final end result.

References
Magne P, Belser U - Bonded Porcelain Restorations in the Anterior Dentition. Quintessence 2002
Dawson P. - Functional Occlusion from TMJ to smile design. Mosby 2007
Gurel – The science and art of porcelain laminate veneers. Quintessence 2003

About the author
Joe Oliver is the founder of The Welbeck Clinic; a highly acclaimed dedicated centre for cosmetic dentistry in the London Harley St district. With more than 15000 veneers fitted, he is a pioneer in cosmetic dentistry, performing in the region of 200 complete smile makeovers a year. He is one of the founders of Cosmetic Dental Seminars, which runs state-of-the-art courses in aesthetic dentistry, www.cosmeticdentalseminars.org

KaVo – Dental Excellence

KaVo, 100 Years Young!
www.100-years-kavo.com

ESTETICA E80
Rise above the rest with KaVo.

- Outstanding ergonomics and attractive, highly functional designs.
- Innovation at its best.
- State of the art technology reliability and functionality at amazingly low prices.

From as little as £286* per month excl VAT

*Finance is subject to status and for business purposes only.

Contact your local KaVo or Gendex supplier for more details!

KaVo, Dental Excellence.

KaVo Dental Limited · Raams Road, Amersham, Bucks HP6 6JL · Tel. 01494 723300 · Fax 01494 431168 · mail: sales@kavo.com · www.kavo.com