This article will outline how the combined and simultaneous use of the Inman Aligner, tooth whitening followed by edge bonding can redefine the approach taken to smile design. It also highlights how it will help dentists respect a patient’s decision as their treatment progresses rather than short-changing to an end result using ceramics setup with classic smile design principles.

Discussion

“Changing cosmetic dentistry” might seem like a pretty big goal, but it’s become very clear from lecturing and writing about this particular discipline that it creates a huge amount of excitement and positive reaction. Dentists see the logic in it very quickly and can also see how, with some education, they can employ a safe, low risk technique that they know their patients will want and will massively change their approach to cosmetic and aesthetic dentistry. They also understand that there is a massive market of patients who will accept this kind of non-invasive treatment happily.

Treatment with the Inman Aligner has been further developed in the UK where techniques are used to make it dramatically effective as a solution for certain mild and moderate anterior orthodontic issues. Cases, which traditionally would take six-10 months with clear aligner systems can, with education, be treated in six weeks.

We have all seen how bleaching can affect a smile. We know how much bonding can improve aesthetics and tooth anatomy. Now that alignment is potentially so simple, these three disciplines have been brought together to create results that easily challenge traditional veneer based smile makeovers. And, if the three treatments are combined with some thought, it is possible to massively improve a patient’s smile in around three months.

All of a sudden the six-10 unit veneer case used for a smile makeover can look ridiculous and be seriously in danger of becoming over treatment. There are always situations where ceramics are highly appropriate, such as in wear cases or in major reconstructions, but for anyone with good quality intact enamel, I believe this kind of treatment represents a far more ethical, patient centric approach.

This is because I believe the way smile design is approached, and perhaps even taught, is wrong. The final outcome, for what is aesthetic important. Golden proportion ideals, tooth width length ratio, gingival zeniths etc all together create something we know to me almost mathematically correct. The problem is that most dentists’ experience their smile design education attached to a lecture or course based on veneer dentistry. As a result dentists will naturally think this to be the only and perhaps fastest way to achieve a “perfect smile”.

If we assess a patient’s smile and try to preview an end result at the first consult, using imaging software, a wax up or even a preview try in, we are not really letting the patient see their teeth improve at different stages to see if their expectations are being met along the way.

The smile design rules are there, but how many patients if they see their teeth improving with alignment then bleaching and then bonding, would actually then take another step with porcelain and some tooth destruction to achieve total perfection? In my experience, very few.

Some still do go further, but at least by then their teeth are straight and we can use truly minimal and almost no prep veneers to improve the aesthetics further.

Most of the time, once we are ¾ through alignment and start to bleach it becomes very clear that simple bonding is all that will be needed to create a very aesthetic smile that previously would only have been achieved with aggressive veneer preps.

The case outlined below is a typical case of a patient who once wanted and considered having porcelain veneers. Instead she opted to align her teeth then bleach and bond.

Case and Diagnosis

This 32-year-old patient complained of her crooked teeth. The smile was clear that the laterals had been worn down because of tooth destruction to achieve total perfection. The patient was aware of what a smile makeover could achieve, but wanted to achieve something without damaging her teeth.

On examination several problems existed. Firstly her teeth were moderately misaligned. This creates aesthetic issues immediately. Large unsightly emargines were made worse around the canines. The standing laterals appeared darker and in the shadow of the lips, the left one being in slight cross-bite. With the centrals splayed out and rotated the line angles of the four incisors were all different.

It was clear at the start by examining the incisal edges that there had been differential degrees of wear meaning that even if the teeth were aligned, the incisal outline would still look uneven - this meant we needed to have a conversation about some potential edge build ups after.

All options were discussed. The patient ruled out fixed braces, even with more recent faster techniques because she wanted, something removable and we had also discussed the possibility of simultaneous bleaching during the alignment phase.

We assessed for an Inman Aligner. At the consultation the occlusion was examined and it was clear that the laterals had room to advance labially and the centrals could also be derotated.

We then needed to assess the actual amount of space needed. Inman Aligner cases should be planned with the software. This case is suitable and also to understand how much space needs to be created. This can be done with models using Inman technique ¾. The SpaceWize tm crowding calculator was used to assess the patient in the chair.

An occlusal photo was taken with a mirror and the upper central incisors were measured with digital calipers to help calibrate the software.

The occlusal photo is uploaded and the calibration tools details entered. The mesial distal widths are simply drawn on the occlusal teeth to make the case. Inman Aligner treatment is always the front 6 teeth. The software calculated the total of the mesial distal widths and this is described as the Required Space.

An ideal curve is then plotted with the software with the proposed final position. This is made with occlusion, aesthetics and function taken into consideration. The curve can be manipulated easily with the software and this goes us the available space. The difference between these two measurements is calculated automatically and this is the amount of space that needs to be created to achieve the final result.

As can be seen in the SpaceWize tracing, 3.1mm of crowding was present. This seemed less than expected when considering the degree of crowding that was at the occlusal photo, but because the laterals are advancing forward, this will actually create space.

It was decided that an Inman Aligner with incorporated expander would be used to treat the case. Incorporated expanders are a useful tool to create space supplementary to IPR or as an alternative. They must not be expanded beyond 2.5mm and only supply a temporary degree of space to allow the anterior to align. The small degree of posterior expansion will always re-appear and the midline can even be unmoved after the anterior have aligned. Each turn produces 0.25mm of space.

Treatment sequence

The Inman Aligner was fitted at the next appointment. In-attuations were given and only a small degree of IPR was performed over the front teeth (0.1 mm per contact).

No IPR was performed initially around the centrals because with the degree of crowding it would be easy to miss the contact point. Instead the teeth are striped strategically and progressively meaning we re-lease a little room to allow the teeth to align then we re-perform IPR over several visits again only performing a little at a time.

Critically Inman Aligner treatment uses progressive anatomic-ally respectful IPR. Despite calculating the amount of crowding present, the IPR is never carried out in one go. IPRs strips or discs. This gives the opportunity to ensure the stripping is far more anatomic-ally respectful than using bars or heavy discs.

This massively reduces the risks of excess space formation, gougings or poor contact anatomy.

The contacts are smoothed and the fluoride gel is applied each time. The composite anchors were also placed on the palatal incisal edge of the instanding lateral teeth to ensure the palatal how engaged correctly.

The patient was also shown how to turn the midline screw. She was instructed to do this once a week and did this for seven weeks, but was seen every 2-5 weeks to check progress and re-perform a little IPR if necessary.

The patient was instructed to wear the Inman Aligner for 16-
18 hours a day. Studies [15,16] show that this is far less likely to cause root resorption and the Inman Aligner is highly effective even with the Aligner out eight hours a day. This allows better hygiene and patients can also function with day-to-day activities more normally.

After nine weeks the laterals were already getting close to the proposed position and the centrals were de-rotating nicely.

At this point with Inman Aligner treatment we often start to bleach. Impressions are taken even though the result is 25 per cent from finished.

Sealed, rubber trays are made and careful instructions are given to the patient.

While the patient is highly concentrated on using the Inman Aligner, they are always highly receptive to using bleaching trays. It adds greatly to motivation and often means they achieve a far better result. Discus Dental Day White is used so that the patient only needs to wear the bleaching trays for 35-45 minutes a day. The patient was happy with the degree of whitening achieved.

It was becoming highly apparent to the patient at this stage that she would only need some final edge binding to achieve a very aesthetic result.

The patient whitened for two weeks. At week 11, alignment with the Inman Aligner was almost complete. A single clear aligner was used to correct some minor spacing and also to help bring the right canine into line. After using the Inman Aligner, canines are far more receptive to movement with clear aligners.

At week 15 the incisal edges from canine to canine were only slightly roughened. No local anaesthetic is required with this simple additive bonding.

Venus from Heraeus Kulzer was used in dentine and enamel shades in B1 was used to build the missing incisal outline. The teeth were then polished with discs, pogo sticks and flexibuff discs. The patient initially was not keen to have centrals that were longer than the laterals so a fairly flat smile line was created. One week later she returned and asked for another 1.5mm of central incisal length. This was again provided by adding more Venus. At the same visit a wire retainer was bonded in place from canine to canine. (12,15)

Results
This patient achieved a result in just 15 weeks that she had only previously thought possible using ceramic veneers in this approximate time.

Her teeth are far better placed for future ceramic restorations if necessary. She commented that she was worried that with veneers, she would have lost the natural character of her teeth, but by using ABB, this was retained and we just made her own teeth more beautiful.

Discussion
Any dentist offering cosmetic and restorative dentistry should be aware of all developing techniques. Many patients in the UK are choosing this approach and are demanding it in their practices. This approach is becoming common with dentists who offer cosmetic solutions, so not offering it and only offering ceramic solutions could result in potential consent issues.

The simple fact is that once a dentist is educated in the advanced use of an Inman Aligner, this kind of treatment is far simpler and less risky than treatments where large amounts of tooth structure are removed and where there is a heavy reliance on porcelains for the final result. Being able to align and bleach simultaneously adds huge value and increases motivation tremendously.

Long-term predictability is far better and the patient doesn’t enter a restorative cycle that can easily worsen the long-term prognosis.

Patients are also far happier because the treatment is more affordable, and they understand the benefits of reducing long-term risk by aligning, bleaching and bonding. Compared to the traditional methods of providing ideal smile design, ABB represents a radical and arguably revolutionary change in the way cases like this are approached.

A far more truly conservative result that actually respects the opinion of the patient at different stages means that heavy arch form preparations, with aggressive tooth removal just to line teeth up to allow space for veneers, could soon become a thing of the past.

Disclosure.
Dr. Qureshi runs hands on courses with Dr. James Russell and Dr. Tim Bradstock-Smith and lectures on the Inman Aligner worldwide.

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Course Information
Information about course dates and training can be received from www.straight-talks.com or www.inmanaligner.com or alternatively email Dr. O’Queris at oq@straight-talks.com or phone +44 (0)203 255 2559.

To pilot O’Queris will be speaking at the IAC’s Conference “Esthetics Meets Aesthetics” on 21 – 23 September 2010 at the Hilton London Metropole. To register, visit www.aacd.org
Dentistry of the 21st Century

A one day Continuing Dental Education Program titled “Dentistry of the 21st Century” was conducted by German Dental Oasis, DHCC on 15th October at the Movenpick Hotel in Dubai, UAE. The conference was well attended by 500 dentists from all over UAE. The conference hosted by the GDO brought together 5 international speakers who are specialists in different fields of Dentistry. The experts who took up various sessions on that day were as follows:

- Dr. Hans Van Der Elst (Germany)
- Dr. Tarun Walia (India)
- Dr. Matthieu Gabriele (France)
- Dr. Sinan Hamadeh (Germany)
- Dr. Souheil Housaini (UAE)

The conference was inaugurated by Dr. Hans van der Elst, Expert in Dental XP one of the biggest Dental Websites in the US and Clinical Director of the German Dental Oasis in Dubai Health Care City. He was the first speaker of the day and dealt with two topics during the course of the day, viz:

- Piezosurgery in Dentistry
- Lazer Treatment in Dentistry

Dr. Tarun Walia, Assistant Professor, College of Dentistry, Ajman University of Science & Technology, delivered the a comprehensive presentation on ‘Clinical decision making in Pediatric dentistry – A simplified Approach’ as the second lecture of the day. Dr. Tarun stressed on the importance of behavior modification in the management of anxious children seeking dental care. He also explained about the various options available to the practicing dental surgeons for restoring grossly carious primary maxillary incisors where majority of the clinical crown is lost due to dental caries. Indications and placement techniques of more durable & esthetically acceptable tooth colored crowns was described in detail to the participants. They were also shown the clinical procedure of placing esthetic restorations, particularly resin modified glass ionomer restorations in different clinical situations.

Dr. Souheil R. Hussaini, President, Chairm an of scientific committee – Continuing Dental Education Implant Dentistry - Study Consortium (IL-SC), sponsored by Temple University- department of periodontology and oral implantology, Philadelphia, USA and an affiliate society of the ICOI, USA. He is also associated with the Study Club of Oral Implantology (SCOI), Emirates Medical Association, UAE and delivered the third lecture of the day on the topic ‘Cosmetic Dentistry Clinical Cases’.

The participants were satisfied with the motivating and informative lectures conducted during the day as this was evident from the participants’ feedback collected at the end of the day. The sessions were greatly appreciated as an evaluation of the feedback from all participants, showed an average score of 4.1 out of 5 for informative program and Lectures.

The GDO looks forward to the next event on the 14 and 15th of January, 2011.