A multi-disciplinary approach to minimally invasive functional aesthetic dentistry

By Dr. Tif Qureshi, UK

Simple tooth alignment is rapidly becoming accepted as the norm in cases that previously would have been treated with porcelain veneers. However, patients often present with a mix of problems such as previous metal ceramic work, the treatment of which should be integrated as part of the treatment plan. Timing becomes a vital part of the treatment when mixing restorative care, alignment, tooth whitening and occlusal planning. The following case illustrates an effective approach to treatment.

Case report

A patient presented complaining that “his two front teeth [old upper anterior crowns] felt as if they were too large and were always hitting the lower teeth”. In addition, his bite never felt “right” (Figure 1). He also wanted to try to improve the appearance of his teeth. He was aware of what could be done with porcelain veneers, but wanted to try to make the best of his own teeth.

Examination

On inspection, it was clear there were several issues:
1. Occlusion - The irregular alignment of the lowers and the thickness of the upper old crowns were adding to the problem of unbalanced anterior contacts. The back of the crowns, especially the upper left central, were hitting the front of his lower teeth, in particular the lower left central.
2. Thickness/aesthetics of the old crowns - The occlusion meant that the upper central crown had been placed quite labially and because it was metal ceramic, made it feel particularly thick.
3. Thickness/aesthetics - The old crowns were adding to the problem of unbalanced anterior contacts. The back of the crowns, especially the upper left central, were hitting the front of his lower teeth, in particular the lower left central.

A heavy, not long centric contact was present in MIP, which was causing slight denture deflection of the central. This meant that the upper central crown had been placed quite labially and because it was metal ceramic, made it feel particularly thick.

Treatment plan was as follows:
1. Remove the two upper crowns and replace them with temporary composite crowns; the old crowns had been made at A3/A3.5 and the natural teeth had darkened a little with age.
2. Simultaneously fit a lower Inman Aligner to align the lower incisors into a better functional position, while using bespoke clear aligners to slightly tilt the upper crowns into better alignment. The rationale for using upper clear aligners and a lower Inman Aligner was that only 1 mm of movement was needed for the uppers and about 2.5 mm of movement was required for the lowers. Inman Aligners are much faster than clear aligners with these kinds of movements. And 2-3 clear aligners with these kinds of movements. A combination of techniques for the lowers. Inman Aligners to align the lower incisors into a better functional position, while using bespoke clear aligners to slightly tilt the upper crowns into better alignment. The rationale for using upper clear aligners and a lower Inman Aligner was that only 1 mm of movement was needed for the uppers and about 2.5 mm of movement was required for the lowers. Inman Aligners are much faster than clear aligners with these kinds of movements. And 2-3 clear aligners can be used to treat both arches more or less simultaneously.
3. Whitening the teeth (during last phase of alignment).

Alternative options

Alternative options were discussed, but after the patient understood how simply and quickly the alignment could be done, seemed a completely ridiculous and unethical solution.

Multiple issues simultaneously applied each time.2-9

Although knowing how much we would need correcting and whether the case is suitable for Inman Aligners or not is of little importance to us. Only Inman Aligners were fitted on the lower and upper teeth respectively. Minimal interproximal reduction (IPR) was started.

Two weeks later, the patient returned. The Inman Aligner and clear aligner were fitted on the lower and upper incisors respectively. Despite calculating the amount of crowding present, the IPR is never carried out in one go. Only IPR strips or discs are used. This gives the opportunity to ensure the stripping is far more anatomically respectful than using burs or heavy discs. This massively reduces the risks of excess space formation, gouging or poor contact anatomy. No more than 0.15 mm per contact on the posterior tooth was adjusted on this single visit. The contacts are smoothed and fluoride gel is applied each time.14
A new lower impression was taken for a lower retainer wire to be fitted later. The temporary crowns were removed and new IPS e.max HT (Ivoclar Vivadent) crowns were bonded using Variolink II (Ivoclar Vivadent) and Optilink Ft (Iv). The occlusion against the aligned lower teeth was checked. The patient was extremely happy with the end result and felt his teeth looked natural (Figures 6-12).

Discussion

The case is another example of why a progressive form of smile design can be so essential in any case where a patient is looking to improve their smile. At every point, the patient sees their smile improving, first with the temporary crowns and then with full crowns, if they are still keen to have full crowns, then at least the teeth are straight and light, so less invasive and more transluscent veneers can be used. More often than not, patients prefer a more natural result where we make “their own teeth look as good as they can”. In a case like this with previous metal ceramics, one can see how integrating alignment and whitening can enhance aesthetics and simplify restoration dramatically. This makes a stable and aesthetically pleasing outcome far easier to achieve (Figures 15-17).

Conclusion

In each of our practices, there must literally be hundreds of patients who have issues similar to this gentleman’s complaint. Previously, conventional solutions often placed a barrier to treatment, adding time and cost into what was already an expensive treatment. Most patients just could not be bothered and would live with it. Now, simple anterior alignment can be so much quicker and more cost effective. I’m amazed at the sheer volume of patients who will have treatment like this done if they are suitable. Being able to combine whitening because the aligners are removable is just another bonus so we can capitalize on the patient’s current compliance and get an even better result. We must literally be hundreds of cases with exceptional results.

Disclosure

Dr Qureshi runs courses with Dr James Russell and Dr Tim Bradstock-Smith and lectures on the Damon Clear2. The author thanks Inman Aligner worldwide.

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References


Disclosure

Dr Qureshi teaches Inman Aligner Training. Inman Aligner courses can be booked at: www.inmanalignertraining.com or email: inman@mdentlab.com

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Dr. Tif Qureshi is Immediate Past President of the British Academy of Cosmetic Dentistry. He has a special interest in minimally invasive cosmetic dentistry and presents hands-on courses and lectures on the Inman Aligner worldwide.

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