

# The Aesthetic Demand

Going beyond clear aligners  
to satisfy patients' needs

by Dr. Robert Gire

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in dentistry at the University of Colorado School of Dental Medicine. Gire, who maintains three private orthodontic offices in Southern California, has been an orthodontic clinical instructor since 2009 at the Ostrow School of Dentistry and is a board-certified diplomate through the American Board of Orthodontics.



Clear brackets, clear aligners and lingual braces are necessities when treating patients for whom aesthetics are more important than comfort or finances. Traditionally, clear brackets have had their challenges: Fracture, breakage, wear to opposing dentition and removal difficulty are all strong considerations when choosing a system that coincides with the orthodontist's specific treatment philosophy. No matter if you're considering self-ligating brackets (passive or active), twin brackets or some type of

combination therapy, there are options today that were not available in the past.

Exceptional treatment using any option can be limited by other factors that may be out of the control of the specific mechanics. For example, obtaining facial harmony may require additional adjuncts such as TADs, lasers or prosthodontic intervention to complement the orthodontic treatment. Well-rounded orthodontic specialists must include these elements in their toolboxes to be successful in this aesthetic age. Luckily,

there are many courses, meetings and other continuing education opportunities that allow orthodontists to include these adjuncts in their armamentaria. Because pressures from DIY companies and general providers providing basic orthodontic services are increasingly prevalent, this knowledge will help us differentiate ourselves in this competitive market.

### Case study: Introduction

A 13-year-old patient presented with mild upper and lower crowding, and her family desired an aesthetic treatment alternative. A clinical exam revealed a Class I dental malocclusion, mild excess gingival display on full animated smile, mild upper and lower crowding, an overjet of 2mm and an overbite of 2mm. Her upper lateral incisors are on the tapered side and we discussed the possibility of buildups/veneers, but the family didn't view them as an aesthetic issue.

There was a minor discrepancy in the free-gingival heights of her upper central incisors. The zenith of her UL1 (#9) was slightly higher than its counterpart, and the discrepancy appeared to slightly worsen during the course of her treatment. There was a mild Bolton discrepancy with mild excess in the lower arch. Her oral hygiene was excellent, there was mild redundant tissue around the maxillary lateral incisors, her profile was mildly convex, and there was no evidence of temporomandibular joint issues. On full animation, I noticed that she exhibited about 2–3mm of maxillary gingival display (Figs. 1a-e).

While the family had a lot of confidence in this patient's discipline to wear aligners, they felt better about pursuing traditional fixed-appliance therapy. While treatment-planning this case, I requested a digital rendering of the final occlusion and

noted that it would require some mild IPR around the lower incisors to maximize her full, anterior coupling because of the mild Bolton discrepancy. The rendering did not include the surrounding facial tissues, but the family and I discussed the idea of aesthetic gingival contouring. This was brought to their attention not only because of the Bolton discrepancy but also because of the very mild excess gingival display on full smile and the mild difference of the gingival heights of her maxillary central incisors.

I generally approach similar cases by evaluating the length of the maxillary clinical crowns where those upper incisors lie on the smile arc, or how they line up on the lower lip and how much redundant tissue masks the clinical crowns.

There are several ways to determine whether orthodontic intrusion or a simple gingivectomy may be required. My aesthetic reference pivots around the 3–5mm mark of gingival display on full smile. Anything less than this, I prefer to perform mild gingival contouring. Anything greater than 5mm, I will discuss the advantages and disadvantages of possible intrusion of the anterior dentition, along with realistic expectations. Anything greater than 8–10mm of full gingival display gets an orthognathic consultation if the patient wants to get the gingival display reduced.



Figs. 1a-e



This patient had shorter, tapered clinical crowns of her lateral incisors with some mild excess tissue interproximally (Figs. 2a and 2b). Her smile arc, however, was consonant and her upper incisors followed her lower lip well.

Because she exhibited 2–3mm of gingival maxillary tissues, I suggested laser gingival recontouring. We frequently use the Gemini diode laser in our office for simple soft-tissue exposures, operculectomies and gingival recontouring.

### Treatment

After our data gathering and treatment presentation, I initiated treatment by bonding upper and lower 7–7 with 0.022 Ormco Symetri Clear brackets MBT prescription (Fig. 3). The brackets are much smaller and less bulky than other

clear twin brackets and are very low-profile and tend to interfere less with the opposing dentition. The low profile doesn't hinder the ability to double-tie as needed (e.g., elastic thread and powerchain, or powerchain and single tie, etc.). The Symetri brackets are strong and durable.

This patient had mild to moderate rotations of her LR3 and UR2. This tends to be somewhat difficult to fully tie in a light wire with a steel tie, because most fear fracturing a tie-wing or debonding the entire clear bracket. (In my experience, Symetri seems to be as strong as our metal twin brackets, and we did not have any fracture or debonding issues in this case or any of our other cases.)

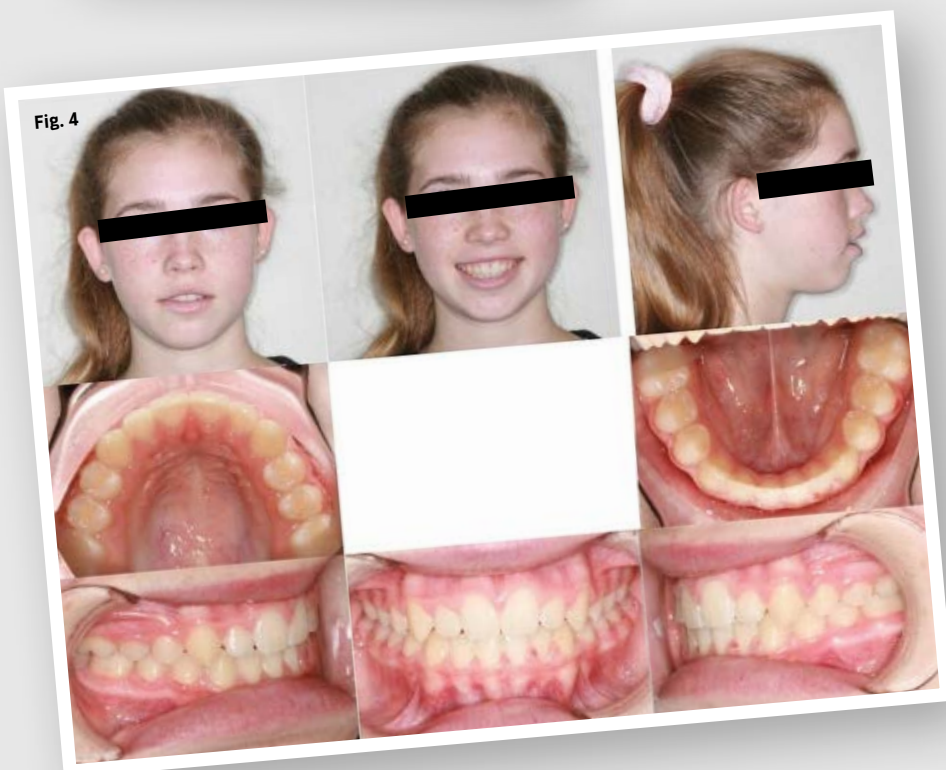
My wire sequence and treatment:

1. 0.014 CuNiTi U/L, early Class II “shorty” elastics (5/16 inch, 2 oz.).
2. 16x16 CuNiTi U/L, transition to Class II elastics (5/16 inch, 3 oz.).
3. 18x25 CuNiTi U/L, followed by a pan/repo appointment, switched to delta elastics (3/16 inch, 3.5 oz.).
4. 19x25 TMA U/L, followed by aesthetic finishing bends as needed, while wearing the same deltas.

After 10 months of active treatment, her appliances were removed (Fig. 4). When removed, Symetri brackets debond in one piece and don't fracture. Speaking to several colleagues, bracket fracture is the main reason that most prefer aligner therapy over clear brackets. If, however, the brackets can be removed just as easily as a metal twin bracket, there's no other reason to sidestep clear brackets.

In my offices, we normally provide a lower fixed bonded retainer to the lower canines only. In this case, the family declined a fixed retainer; upper and lower vacuum-formed retainers were provided instead.

I prefer to wait at least four to six weeks after braces removal to assess the tissues





before any laser intervention. There will always be some reduction in the tissues postremoval, and in some cases allowing the tissues to regress slightly means less overall tissue removal during the actual procedure.

The gingival-height discrepancy of the patient's upper central incisors was still quite evident after the waiting period (Fig. 5). Some redundant tissue around her lateral incisors also made the clinical crowns appear to be shorter. We decided to remove some excess tissue and aesthetically contour her maxillary "social six."

I mildly anesthetized the gingival tissues just apical to UR3 to UL3. An assessment was made via probing to determine where her CEJ and crestal bone were located. Careful determination was made to not violate her biologic width, thus creating a source of inflammation. Bleeding points were carefully established and the tissue was removed via laser. Postop instructions were provided and she returned after another four weeks for final photos (Fig. 6).

### Conclusion

Active treatment took eight visits and 10 months. Total treatment was 12 months, including the month of retention before her laser treatment and one month after for final records. More importantly, an additional service was provided after the conventional orthodontic therapy. DIY and at-home services cannot provide this type of complete and thorough treatment planning that involves not only the teeth, but also how the teeth are framed within the soft tissue and the rest of the face.

Combining additional resources such as a diode laser along with a state-of-the-art aesthetic bracket allows me to fully complete my comprehensive treatment plan. Listening to our patients' needs and using our treatment modalities to provide a functional and aesthetic smile will always be the ultimate differentiator. ■

