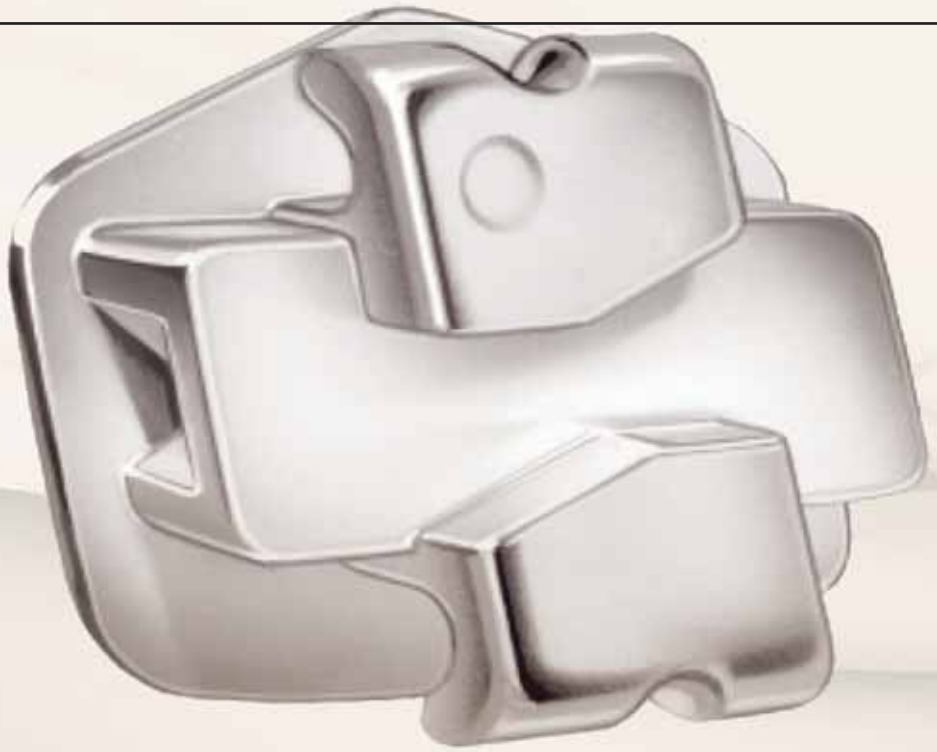

Fig. 1

Treating Class III Patients with the Tip-Edge Bracket System

By Jeffery Gerhardt, DDS

Skeletal Class III patients can be some of the most challenging cases to treat in orthodontics. I am sharing two Class III patients who were treated by student dentists in the 2012-2014 Academy of Gp Orthodontic two-year, hands-on continuing education class in Austin, Texas. Both patients were treated using the Tip-edge bracket system by Tp Orthodontics. (Fig. 1) These two patients would have been optimally treated with orthognathic surgery, but both declined the surgical option.

Fig. 2

Referencing the textbook Contemporary Orthodontics Forth Edition by William Profitt, box 19-1 on page 693, there is a description of cases which can be camouflaged to hide skeletal problems with acceptable results.

Acceptable Results Likely

-Average or short facial pattern
-Mild anterposterior jaw discrepancy
-Crowding < 4-6 mm
-Normal soft tissue features (nose, lips, chin)
-No transverse skeletal problems

Poor Results Likely

-Long vertical facial pattern
-Moderate or severe anteroposterior jaw discrepancy
-Crowding > 4-6 mm -Exaggerated features
-Transverse skeletal component of problem

Through personal experience, I have found that the

Fig. 3

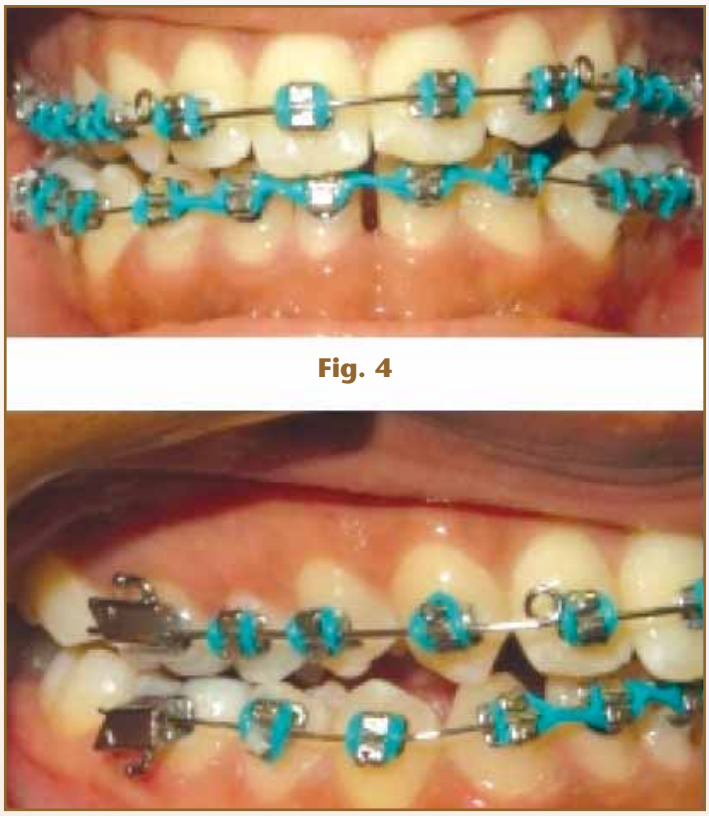

Fig. 4

hardest Class III cases to camouflage have the following characteristics:

1. Full step molar Class III (molars often are so Class III that they do not occlude).
2. Cases that are non-extraction cases. At least with extraction cases, there is space to work with. With non-extraction cases, the class III is often purely a skeletal problem.
3. Facial features such as a large chin, small nose or small upper lip. All these characteristics are hard to hide.
4. Unrealistic expectations on the patient's part. They have a skeletal problem, which is hard to hide with dentalalveolar alone.

Case 1: Patient is 24-year-old female

Chief complaint: She has never liked her under bite. She was told all her life that the only way to correct it was through orthognathic surgery. She would do the surgery if needed, but would like to avoid any surgery. (Fig. 2)

Orthodontic workup

- Full step molar class III dental
- Class III skeletal
- Missing tooth #24, has a failing Maryland bridge to replace the tooth

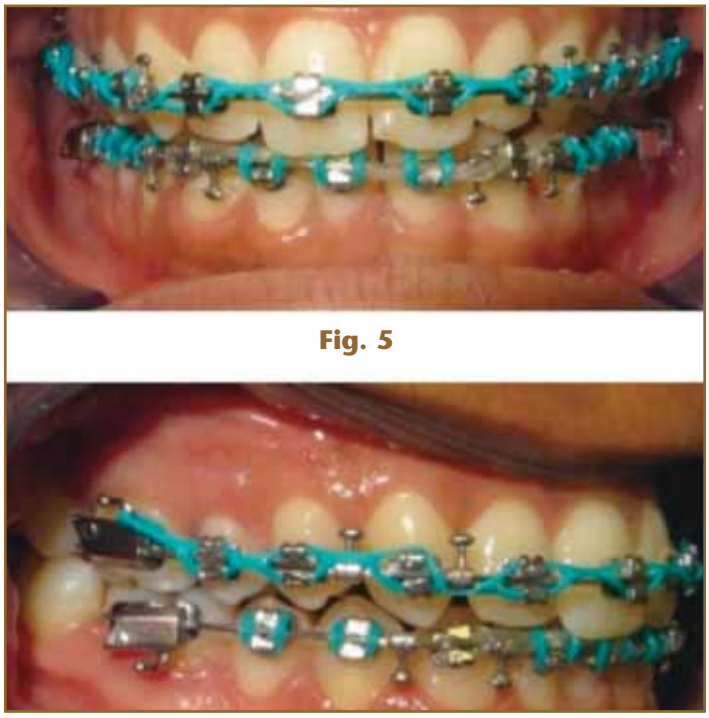

Fig. 5

- Has had periodontal surgery between teeth #18 and 19
- Ceph analysis Lower 1 to apo +7 (ideally +6) indicating full face
- Witts -9.4 (ideally +/- 3 mm) - indicating class III skeletal
- Y-axis 64 (ideally 66)

Fig. 6

- E-Plane -3/+1
- Model discrepancy +.5 mm
- Total discrepancy of -1.5 mm (indicating a non-extraction case)

Case 1 Treatment Plan

We had an oral surgery consultation for possible orthognathic surgery, but the patient declined surgery. At that point, we decided to take out failing Maryland Bridge and treat case as a single-tooth extraction case, knowing that we will not get perfect results but much improved.

Stage I Braces (Fig. 3)

- Molar tubes on first molars.
- Bracketed anterior teeth.
- Upper and lower .016 ss wire with 30 degree bite opening bends, 2 oz. Class III elastics.
- Removed failing Maryland bridge and placed plastic pontic on orthodontic wire. Made pontic too small intentionally to close space. As space closes, will shave down pontic mesial-distally.

Stage II (Fig. 4)

- Patient no longer in an under bite
- Bracketed bicuspids
- Removed pontic so could finish closing space
- Upper and lower .016 ss wires
- 2 oz. class III elastics
- Treatment time: 7 months

Stage III (Fig. 5)

- Upper and lower .021 x .025 rectangular wires
- Lower E-link from 3-3 to close space
- 4 oz. boxing elastics worn at night to settle bite
- Expanded upper wire to correct posterior crossbite.
- Treatment time: 16 months

Final Photos of Case 1 (Fig. 6)

- Final Ceph numbers
- Lower 1 to apo +2.3 (started with +7)
- Witts -7.1 (started with -9)
- Patient and family were extremely happy with results.

Case 2: Patient is 16-year-old male

The patient's chief complaint was that he wants his underbite corrected and teeth straightened. (Fig. 7)

Fig. 7

Fig. 8

"The unique bracket design allows a large amount of tooth movement with minimum anchorage and force. There was no need to use second molars for extra anchorage and the strongest elastics used were only 4 ounces."

Fig. 9

Orthodontic workup

- Class III skeletal and dental.
- Ceph analysis.
- Lower 1 to apo +10.4 (ideal +2) indicating full face.
- Witts -10.8 (ideal +/- 3 mm) indicating Class III skeletal.
- Model discrepancy of -1.5, total discrepancy of -18.5 (indicating an extraction case).

Case 2 Treatment (Figs. 8-9)

- Ideally an orthognathic case. Parents decided not to do surgery, understanding that the results will not be ideal.
- Will treat by extracting upper 5's and lower 4's (normal Class III extraction pattern).

Stage I Braces

- Band first molars -Bracket anteriors.
- Upper and lower .016 niti wires.

Stage II

- Bracket bicuspids.
- Upper and lower .020 ss wires.
- E-links to close space.
- Patient wearing 4 oz. Class III elastics.

Stage III

- .021 x .025 rectangular wires.

Fig. 10

- Medium power chains to close remaining space.
- Continuing to wear Class III elastics.

Case 2 Final Outcome (Fig. 10)

We took off his braces early at the patient's requests, because he was moving out of state and was happy with the results. At that point, we made the patient a spring aligner plus active retainers to finish straightening teeth and to let bite settle better. Photos were taken the day the braces were taken off. Class III patients can be treated with the tip-edge technique. The unique bracket design allows a large amount of tooth movement with minimum anchorage and force. There was no need to use second molars for extra anchorage and the strongest elastics used were only 4 ounces.

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