Short-Term Ortho: **Now Even Shorter**

Manual osteoperforation can reduce treatment time

by Dr. Noel Ananthan

Dr. Noel Ananthan graduated from the University of Toronto's Faculty of Dentistry in 1986, where he gained early acceptance after one year of undergraduate study at the University of Western Ontario. He immediately opened his own private practice, which he has maintained for the past 32 years, focusing on comprehensive and aesthetic dentistry. Short-term orthodontics has allowed him to reintegrate orthodontics, one of his passions since dental school, into his practice both as a standalone treatment and as an adjunct to his comprehensive cases.

Dentistry has seen a wonderful progression from a reactive, therapeutic repair mindset to one of deliberate, thoughtful assessment, treatment planning and intervention so patients enjoy healthier teeth and more attractive smiles. Correspondingly, today's patients are better informed and receptive to the co-discovery process, transcending the "if it ain't broke, don't fix it" mentality.

One of the core treatment service offerings in my practice is short-term orthodontics. The system uses indirect bonding trays with brackets digitally positioned for accuracy. The aesthetic brackets and wires make fixed orthodontic treatment an acceptable and attractive option for my patients.

My philosophy in establishing a comprehensive treatment plan for my patients is that well-aligned and well-leveled arches are a better starting point for quality restorative and cosmetic treatment and healthier from a hygiene and periodontal standpoint.

The basic concept behind the system is simple. Brackets accurately positioned by the laboratory and easily inserted using the custom bonding trays are acted upon by shape-memory nickel-titanium archwires to align the teeth for beautiful archform. The archwires gently work to alleviate crowding by rounding out the arch, facilitated by the use of conservative interproximal reduction. Treatment times are typically in the four- to nine-month timeline, with the average case requiring about six months to complete.

A new tool that I have added to my short-term orthodontic armamentarium is manual osteoperforation, or MOP. Using this tool, dentists create microperforations in alveolar bone, where the osseous remodeling process takes place in the orthodontic movement of teeth. The perforations are carried out under topical anesthetic, allowing patient acceptance and comfort, and are made using power or manual drivers. I've used them both and prefer the power driver.

My standard protocol focuses the perforations in the aesthetic anterior segment, canine to canine, which greatly affects


Fig. 1

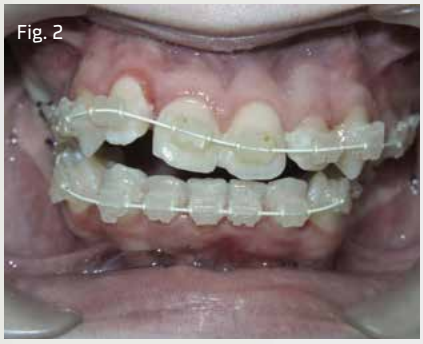


Fig. 2


Fig. 3

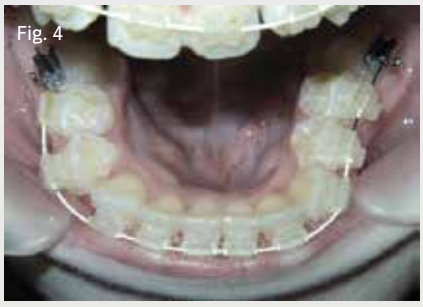


Fig. 4


Fig. 5

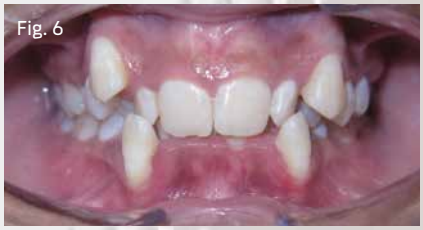


Fig. 6


Fig. 7


Fig. 8

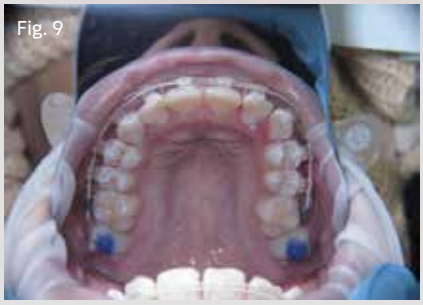


Fig. 9


Fig. 10


Fig. 11

By incorporating MOP into treatments, delivering dramatic smile transformations such as the ones seen on this page can be predictable and even more time-efficient.

patients' perception of their smiles. I carry out a MOP regimen using Propel drivers at the initial bonding appointment and once more at the three-month point to provide an added boost for tooth movement. By incorporating MOP into treatments, delivering dramatic smile transformations such as those seen in my patients Shelby (Figs. 1–5) and Cindy (Figs. 6–11) can be predictable and even more time-efficient.

Even in the condensed time frame of short-term orthodontics, the patients' singular focus is typically "When do I get the braces off?" In my capacity as a clinical instructor for Six Months Smiles, I've focused my attention and efforts on elevating fixed short-term orthodontic treatment to a higher plane. My patient Hannah is a perfect example of this. Much of the movement in short-term orthodontic treatment, fixed and removable, is primarily focused on tipping the teeth.

We see in Figs. 12–15 (p. 68) that Hannah's lower right canine is mesioangularly tipped. Rounding, or expansion, of the

What's your opinion of short-term ortho?

Dentaltown wants to hear what you think about short-term orthodontics—and why. Sound off in the comments section of this article online at **dentaltown.com/magazine**.

archform will create some space to alleviate crowding; however, a significant amount of interproximal reduction would still be required, resulting in a potentially marked loss of enamel and still leaving the tooth mesio-angularly tipped. Excessive enamel reduction also runs counter to our desire for minimally invasive dentistry. Uprighting the tooth would reduce the absolute amount of mesio-distal space required for alignment. However, the anchorage, or resistance to movement, of the large-rooted canine can make that uprighting problematic in a shortened-treatment time frame.

In this case, MOP facilitated efficient and effective uprighting. Hannah's treatment was completed in eight months using no interproximal reduction. The uprighting of the canine not only alleviated the associated crowding, but also created arch space to allow overall alignment. The uprighting can be seen progressing in Fig. 14, while Figs. 12 and 15 show Hannah's before-and-after appearance.

Knowing and applying the ability to predictably achieve these types of movement can positively affect case assessment, treatment planning and results. Patients often present with what appears to be a low-complexity case, and I may not offer adjunctive treatment. But when it is desired, I can provide MOP at a regular appointment in five minutes. This reactive MOP use helps deliver the smile they wanted.

Other indications

Short-term orthodontic treatment can represent a powerful tool for dentists beyond simply straighter teeth. No longer are we constrained to retrofitting our restorative and aesthetic treatment within the confines of the tableau the patient presents. We can now level and align the arches to create a new starting canvas, allowing potentially better and more conservative results.

The next patient, Richard, is a nice example of this.

Richard was referred to me to replace a dislodged bridge, caused by gross caries in the upper left first bicuspid (Figs. 16–19). We certainly could have prepared and fabricated a new bridge extended to the upper left second bicuspid. However, the patient understood the value of placing implants at the upper left canine and first bicuspid. Requiring a little more co-discovery on his part was the benefit of using short-term orthodontic treatment to open his bite and create better interocclusal clearance for the implant restorations.

MOP was used in anterior leveling and opening of the bite. A health issue arose at the four-month point of treatment that necessitated finishing the orthodontics earlier than planned. Despite this, we achieved our goal of creating the desired vertical clearance, allowing improved restorations at the upper left canine and first bicuspid. In addition, there was more favorable occlusal loading on their supporting implants. You can also see in Fig. 19 that despite his trepidation about dental treatment in general, the patient chose to have some additional elective porcelain work to improve his smile.

Conclusion

Day in and day out, restorative dentists face the challenges of striving to deliver excellence under compromised circumstances. Even seemingly routine restorative treatment plans can be undermined by the presenting dentition and occlusion. Take, for example, the edentulous lower right posterior segment seen in Fig. 20. Regardless of the prosthetic treatment solution determined by dentists and patients, simple fixed short-term orthodontic treatment to counteract the supereruption of the opposing teeth sets the stage for a better partial denture/bridge/implants, and likely better long-term performance and durability.

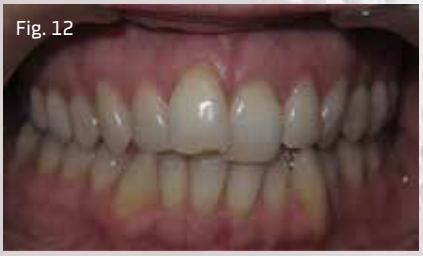


Fig. 12


Fig. 13

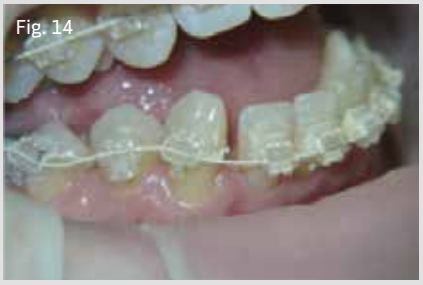


Fig. 14


Fig. 15

The postorthodontic result seen in Fig. 21 is certainly a better starting point.

Comprehensive orthodontic treatment can be the gold standard for all of our patients, including adults. The major objection from our adult patients is the required treatment time. Short-term orthodontic treatment provides them with an option following the mantra of Dr. Vince Kokich Sr. to treat children idealistically and adults realistically. MOP wonderfully enhances our capabilities in the short-term orthodontic realm, which is beneficial to both dentists and patients alike. ■

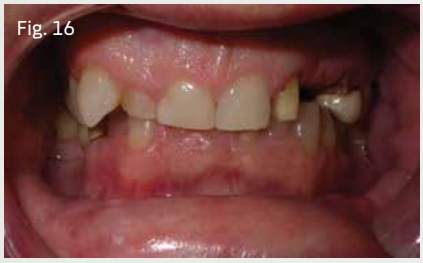


Fig. 16

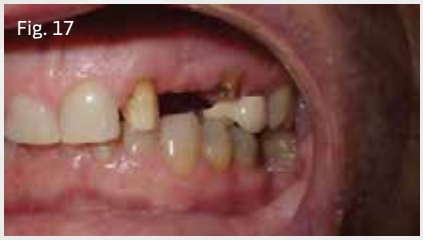
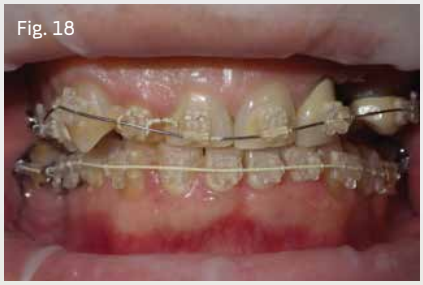


Fig. 17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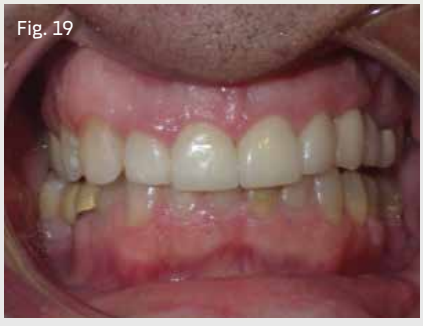
Fig. 19

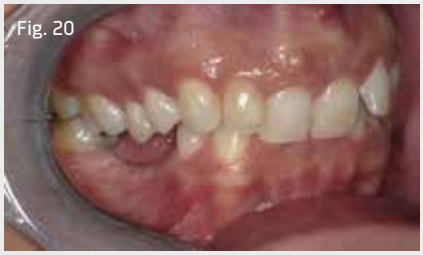
Fig. 20


Fig. 21