Orthodontic Treatment in the General Dentistry Office

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Many general dentists are now offering orthodontic services to their patients. This article will detail some key clinical diagnostic factors that will help determine proper case selection for predictable treatment in the GP office, when to seek help from a mentor, and when to refer to a specialist.

Many GPs start with more aesthetically-focused orthodontic treatments (cosmetic orthodontics) such as clear aligners or clear fixed braces with shorter treatment duration.

While traditional/comprehensive orthodontics is the gold standard, it is often not accepted by patients. The two main patient objections are treatment time and braces visibility.

This lack of treatment acceptance is a major contributor to the explosion in these more aesthetically-focused treatment options, which typically overcome these patient objections.

Cosmetic orthodontic procedures are geared more toward anterior cosmetic correction in adult patients than skeletal and occlusal change in young patients. Typical corrections include leveling, aligning and rotating the teeth, and opening deep bites. Corrections not typically made include significantly changing the canine/molar class or facial profile. The focus instead is on the goal of giving the patient a great smile quickly, safely, and predictably, while leaving a stable cosmetic result (Figs. 1 & 2).

This does not mean you will treat every patient who walks through the door. In fact, many doctors will actually refer more cases to the specialist once their eyes are opened to looking for orthodontic problems. To help doctors visualize the goals of treatment, we tell them to view cosmetic orthodontics as “orthodontic veneers.” The goal of porcelain veneers is to give your patient a great smile. The goal of cosmetic orthodontics is the same, only instead of preparing teeth and bonding porcelain, we move the teeth to their most beautiful position. We have the same end goal in mind—a great smile—we just take two different roads to get there.
Many doctors are unsure which cases can be predictably treated with these modalities. Unfortunately, many of these courses are focused on lab profits instead of orthodontic education for the doctors. Regardless of the treatment, it is important to diagnose and treatment plan the case yourself. Ideally you’ll want to find a course that teaches the principles of orthodontic diagnosis and treatment planning. These principles can then be used with any cosmetic ortho technique—clear aligners or clear fixed braces. You can still utilize any lab services that you feel will help you plan or execute the cases, of course, but you are not dependent on them for case planning.

**Case selection**

Looking at a few key clinical diagnostic factors will help you determine if this case will be predictably treated or if it should be referred to the specialist. This is in no way a complete listing, but gives you some key items to be mindful of.

In very broad strokes, Class I and Class II cases with deeper bites are more predictable to treat than Class III or shallow/open bite cases. Why is that? Patients will typically accept some overjet and some deep bite at the end of treatment if their crowding/spacing or other issues of concern are resolved and they have a beautiful smile.

Conversely, they may not accept a Class III anterior crossbite or an open bite, particularly if they did not have one prior to starting treatment. Some of these situations are “hidden” and can be missed by doctors with less diagnostic, treatment planning or clinical experience. Patients can have more mid-course undesired tooth movements that may be difficult or time-consuming to recover from. These cases are best treated by those with more orthodontic experience, with the help of a mentor, or by referral to a specialist.

**Arch form**

The ideal arch form should be set such that you are not significantly flaring the anterior teeth to an unstable, non-aesthetic, or periodontally unhealthy position. Constricted arches with crowded, retruded teeth are ideal for cosmetic orthodontics. For every 1mm you move a retruded incisor forward, you gain 0.5mm of space. If you move four incisors 1mm forward, you gain 2mm of space. Simply regaining ideal arch form allows for resolution for much of the crowding.

**Upper and lower incisor angles**

In conjunction with the arch form, the incisor angles are a valuable case selection tool. With some experience you can judge these angles fairly accurately. These can also be verified with a lateral cephalometric image.

The following scenarios typically make for more predictable cases:

- Retruded, crowded incisors with incisal edges lingual to ideal arch form
- Flared, spaced incisors with incisal edges facial to ideal arch form (unless significant tongue thrust).

In both scenarios, returning the teeth to ideal arch form and incisor angles will aid in resolving the crowding or closing the spaces.

The following are often best treated by those with more orthodontic experience or with the help of a mentor, or referred to a specialist:

- Flared, crowded incisors with incisal edges facial to ideal arch form.

These are usually tooth size/arch size discrepancies requiring a combination of orthodontics and restorative treatment.

**Premolar rotations**

While you are looking at the arch form, also look at the position of the premolar teeth. Correcting any rotations in these teeth will give you more space along the ideal arch form to be used for anterior alignment. This will also reduce the amount of interproximal reduction (IPR) needed to fit the teeth into the ideal arch form. Don’t overlook this powerful space-maker. Keep in mind that fixed braces have this capability, whereas some clear-aligner systems do not.

**Amount of IPR needed**

Performing IPR from the distal of the canine to the distal of the canine gains from 3-4mm of space on average. As such,
cases that require 3mm of IPR or less can be treated predictably. Determining the amount of IPR needed can be determined manually or digitally by a lab. It is simply a matter of measuring the available space (arch length) through the future contact points of the ideal arch form and subtracting the needed space (width of the teeth). The result is the amount of IPR needed to fit the teeth into the desired arch form (Fig. 3). It is important when measuring to correlate to the proper cosmetic orthodontic treatment modality. For example, fixed braces can derotate the premolars, so you measure the arch length from second premolar to second premolar (5 to 5).

Many clear-aligner systems move primarily the incisors, so you measure the arch length from canine to canine (3 to 3). If the case needs more than 3mm of IPR it is best treated by those with more orthodontic experience or with the help of a mentor, or referred to a specialist. (Figs. 4 & 5)

Dental overbite OB

Orthodontic tooth movement has the tendency to open bites. While this is beneficial in deep-bite cases, it can be an undesired in shallow or open-bite cases. Mild to moderate deep bites (30 percent to 75 percent) are typically treated predictably. Bite opening is desired in these cases to allow for that “wall of teeth” look when the patient smiles, to remove traps to lower anterior tooth movement, and to reduce incisal interferences that can lead to relapse.

The following cases are best treated by those with more orthodontic experience or with the help of a mentor, or referred to a specialist:

- Shallow bites (< 20 percent) and anterior open bites
- Severe deep bites (> 75 percent)

These cases can be difficult to open. They are often multifactorial and they can be difficult to treat to a stable aesthetic result.

Bite opening is desired in these cases to allow for that “wall of teeth” look when the patient smiles, to remove traps to lower anterior tooth movement, and to reduce incisal interferences that can lead to relapse.

Chin-up view

The chin-up view is a valuable tool. It shows traps to tooth movement that are commonly caused from constricted arches and deep overbite. Releasing these traps allows a path for efficient, predictable tooth movement. If a deep bite is trapping the teeth, it is imperative that the bite be opened to a height that removes the trap. This is done during the treatment with the clear aligners themselves, or with composite buildups on the teeth when using other orthodontic treatment methods. Prior to case completion, the overbite must be opened to this height. Otherwise when the

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aligners or braces are removed there will likely be incisal interferences that can lead to relapse (even with fixed retainers).

If you are unsure how to open the bite to this position with the chosen modality for this case, seek the help of a mentor or refer to a specialist (Fig. 6).

**Conclusion**

These are some of the clinical diagnostic factors that will help you determine proper orthodontic case selection for the GP office. Of course this is not a complete list, but it gives some key factors to be mindful of when determining which orthodontic case can be predictably treated in your office and which cases should be referred to the specialist.