Look beyond malocclusion to evaluate child’s airway

Orthodontics is no longer just about teeth but is about the overall health of our patients. There are many patients out there who are struggling to breathe and sleep. The role of the orthodontist is expanding to not only look at a patient’s malocclusion, but rather looking at the whole child and his or her overall health. Orthodontists should be screening for sleep, evaluating airways and identifying improper growth and development of the oral cavity. Understanding how to eliminate improper habits and instill proper habits can assist in long-term benefits.

It is imperative to understand sleep disordered breathing (SDB), its outward symptoms, the underlying root causes and the tools available to evaluate and, most importantly, treat. These underlying root causes include narrow arches or constriction of the maxilla, vaulted palate, tongue posture, improper swallow, mouth breathing, poor jaw relations, and the underdeveloped mandible and/or maxilla, which all can contribute to an unhealthy airway.

Incorporating the evaluation of the outward symptoms of SDB begins with the HealthyStart sleep questionnaire, which identifies 27 outward symptoms of SDB, that a parent fills out, indicating the degree of severity. It is important for parents to spend the time to fill out the form and, if necessary, take time to evaluate their child’s sleep habits by videotaping them sleeping or just spending 30 minutes sitting in the bedroom to listen to their child breathe.

Mouth breathing is the most serious of the habits and represents approximately 46.7 percent in a study of 501 children. Frequently, a parent will not recognize nighttime mouth breathing in their child. Snoring is an easier symptom to identify, but not all mouth breathers will snore. Snoring should be more accurately described as heavy breathing or breathing that can be heard. Research shows that if a child mouth breathes, seven other outward symptoms will also be seen.

Children with habitual snoring in primary school show prevalence and association with sleep-related disorders and poor school performance. Additional research shows that snoring is associated with behavioral issues and is statistically significant for hyperactive behavior, concentration deficits, daytime tiredness, falling asleep while watching television and falling asleep in school. Tooth grinding also shows a significant and independent association with poor school performance.

Other evaluation tools available include a cephalometric radiograph and/or a CBCT scan. These records provide additional information on airway size and volume. Drawbacks to the cephalometric and the CBCT scans are that the view of the airway is only observable in the upright position and not being able to provide imaging of the airway in a reclined position during sleep.

Statistics have shown that 21 percent of the population will show a compromised airway in this vertical position, with 79 percent showing a normal airway. This can lead one to believe that these patients experiencing breathing and airway issues during sleep could be a result of habitual issues present during sleep, such as mouth breathing and nasal airway problems.

Sleep testing is also available for patients. There are home sleep tests, clinical sleep tests and CPC monitoring. It is important to understand the benefits and drawbacks of each of these tests and who will prescribe, read and determine treatment options. This is an area in which a collaborative effort can occur with a sleep physician and the orthodontist.

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Additional collaboration occurring between the medical professional, sleep physician, ENT, pediatrician, neurologist, nutritionist, psychiatrist and the orthodontist is critical when evaluating the entire child. Each of these medical professionals offers the ability to address and address the various factors that contribute to sleep and breathing issues.

A severe breathing issue with a patient, with tonsils almost or touching each other, should be referred to the ENT. If a parent indicates on the sleep questionnaire that a stoppage of breathing occurs during sleep or interrupted snoring, this should indicate that a referral to a sleep MD is necessary. Keeping a patient’s pediatrician involved in the treatment is extremely important and builds a referral basis.

It is apparent the orthodontic profession is changing and broadening its scope of evaluation and treatment. Research shows that nine out of 10 children exhibit one or more outward symptoms of SDB. The growing epidemic of sleep issues appear to go largely undiagnosed, misdiagnosed or frequently treated with medication.

By creating open airway orthodontics, an orthodontist is able to identify airway issues and address improper growth and development as well as orthodontic conditions that are associated with sleep difficulties. Maloccluded teeth can often indicate a narrow palate. Overjet can indicate a deficiency in growth in both the upper and lower jaw. A maxillary posterior crossbite can indicate a sleep issue and deficiency in growth of the nasal cavity and can indicate a compromised upper (nasopharynx) airway.

The HealthyStart® treatment is able to address these underlying root causes that can contribute to sleep and breathing issues. The conditions addressed with the HealthyStart’s treatment protocol expands the upper arch, corrects any overjet, any overbite, crossbite, open-bite, gummy smile and the Class II and III condition. It can also address the habitual issues, including mouth breathing, teeth grinding, thumb or finger sucking, tongue thrust and improper resting tongue position, open-bite and an improper swallow.

The HealthyStart appliance is designed with active myofunctional therapy built into every appliance, providing repetitive correction of proper swallow, proper tongue placement, nasal breathing and expansion of the arches.

A child swallows one time a minute during sleep, and, therefore, by wearing the HealthyStart Habit Corrector while the child sleeps, the myofunctional therapy will be repeated more than 500 times per night.

The HealthyStart treatment is non-invasive and non-pharmaceutical, and oral appliances are worn primarily passively at night for the younger patients and two hours per day for the older patient to guide and promote the growth and development as well as address the habits and the orthodontic conditions that are present requiring correction.

A HealthyStart patient

Education for the orthodontist is imperative. Classes are being offered. HealthyStart provides an online digital class that delivers a six-video education series, six live study group sessions as well as implementation, all of which is done simultaneously while treating two patients.

Now’s the time to look beyond the teeth to identify the health issues that impact your patients and provide them with a comprehensive treatment that provides a healthier lifetime of beautiful smiles.
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Increase production, reduce expenses and improve the patient experience

By Shofu Dental Staff

Dentists who strive to increase the effectiveness of clear aligner therapies in their practice seek products that can engage their team members and improve the experience of a patient. Digital photography plays a key role in documentation treatments. With the right camera, team members can help increase the patient’s understanding of the clear aligner treatment for easy case acceptance.

The EyeSpecial C-III camera from Shofu enables staff to take images for case documentation, diagnosis and treatment planning, and patient communication and education. This digital dental camera has eight pre-programmed shooting modes that clinicians and their team members can use to complete their photo series with ease and consistency, according to the company.

For every step of orthodontic photography, the EyeSpecial C-III will automatically set the appropriate f-stop, aperture and focal length to deliver consistent ideal photographs, leaving the camera’s operator to simply select a suitable mode. Incorporating intuitive functions tailored specifically for dentistry, the EyeSpecial C-III is designed to handle all clinical applications regardless of who is taking the photos.

Combining the photos with a draw/edit function, which allows for making notes directly on images, is a unique attribute for effective treatment evaluation or a discussion about the progress or challenges associated with the modality. Engineered to provide functionality, the ultralight (weighing ca. 1lb) EyeSpecial C-III complies with infection control protocols. The camera’s body is water-, chemical- and scratch-resistant, and it can be disinfected with a sterilizing wipe, reducing the possibility of cross-contamination.

In clear aligner therapy, proper tooth positioning and the desired tooth movement require composite resin attachments (buttons) in a combination with the aligners. For optimal results for the creation of composite attachments, select Shofu’s bioactive Gionomer composite, Beautifull II (packable) or Beautifull Flow Plus (X) F00 (zero flow, flowable), which demonstrates excellent physical properties and esthetics, according to the company, and has the clinical benefits to sustainably release and recharge fluoride, neutralize acids and inhibit plaque build-up.

Both Beautifull II and Beautifull Flow Plus (X) F00 have a full shade range allowing for invisible buttons during treatment. Prior to the placement of the composite, the tooth surface will need to be prepared for the application of the adhesive system. BeautiBond is recommended for enamel bonding and Ceraross Bond for porcelain, zirconia or gold restorations. Both can be easily removed at the end of a modality using appropriate finishing and polishing tools.

Designed to aid the safe removal of orthodontic attachments created with direct composites, the Kit Attachment Removal for Clear Aligners from Shofu will help clinicians and their team members detach the composite buttons and restore the tooth to a highly esthetic look, without marring the surface, according to the company.

The removal technique associated with Shofu’s kit supports minimally invasive dentistry. In a quick and simple procedure, according to the company, the bulk of a composite can be removed with either a Super-Snap black disk or a Robit Carbide Finisher bur. The remaining prominence of an attachment can be reduced with either OneGloss PS or a Super-Snap violet disk. With a Super-Snap X-Treme green and red disks, the tooth surface can be efficiently prepared for the final polishing conducted with a DirectDia Polishing Paste and a Super-Snap SuperBuff disk.

Finishing and polishing after the attachment removal are vital to the clinical success of a clear aligner therapy. However, selecting the proper system can be challenging and, perhaps, overwhelming. According to the company, the Attachment Removal Kit for Clear Aligners delivers proven instruments and protocols to help team members safely remove orthodontic attachments and restore teeth to a highly esthetic look in an efficient and predictable manner.

Change your workflow with digital technology

By Mark S. Sanchez, DDS, founder, CEO and chief developer at topsOrtho

Digital technology has rapidly changed the orthodontic profession. Innovation is leading the way. Today, many practices are discovering the benefits of digital workflow.

Repetitive tasks can be performed at a faster rate, with all information saved in the digital workflow. It is also more efficient and cost-effective. With digital technology, you can print, store, and share digital files.

In order to take advantage of the benefits that digital technology can offer, you’ll need to choose the right technology. Here are some key considerations:

• Reliability is another benefit. Digital files don’t get lost in shipping. They’re instantly reproducible and can be easily and safely accessed by everyone on your team.

• Digital workflow can also reduce start-to-finish times in your processes. With good organization and workflow, lab cases can be produced faster in-house. That’s a benefit the patients really love — less time waiting to get their appliances.

To get started, let’s begin with a working definition of digital workflow. This is the means by which hardware and software create models of the hard and soft tissues of the mouth and face. It’s electronic documentation of the current state of the patient’s mouth. At most practices, a patient’s record includes photos of the face and teeth, intraoral scans, a cephalometric analysis and a 3-D CBCT scan.

The digital models are then manipulated to create the tooth positions as they will be after treatment.

3-D printing

This is the Apple iPod of orthodontic technology — we didn’t know how much we’d like it until we had it.

Initial costs for setting up a 3-D printer can seem daunting, but time savings and the money it generates for your bottom line makes it worth it. Whether you send a case out or have it made in a lab in your office, the lab techs will take the digital files from the treatment-planning software and import them into the printer software.

Once printing is done, the lab techs cut away excess aligner material and smooths the edges. A full set of staged treatment aligners can be produced at once to save both time and money. Auxiliary appliances will require other steps.

In case you’re considering getting a 3-D printer, keep these things in mind. First, dependent upon how much printing you plan to do, consider hiring a new staff member who can become totally devoted to it.

You’ll need space for a lab. Storage shouldn’t be as big a problem as it is for stone models. It’s great to have digital files that are immediately available instead of digging through paperwork, X-rays and model boxes trying to find a case for review. For 3-D printing, you’ll need: an intraoral scanner, camera, 3-D printer, thermoformer and 3-D imaging software.

Today, we’re experiencing faster and better results and witnessing financial gain as a result of digital workflow. 3-D printing done in-house is faster, gives you more control and raises your bottom line.