

Adopting iTero™ scanners to diagnose, communicate, and treat patients – a general dentist perspective.



Dr. Lovedeep Randhawa has practiced for over 18 years in British Columbia, Canada. She is among the first dentists in Canada to implement chairside CAD/CAM with glidewell.io™ and integrate digital workflows into her two practices. Dr. Randhawa is a Clear Aligner Teen Residency Program graduate from the American Academy of Clear Aligners (AACA) and is currently pursuing a fellowship with the Academy of General Dentistry (AGD).

She is an AGD, AACA, the American Academy of Cosmetic Dentistry, and the Spear Faculty Club member. Dr. Randhawa graduated at the top of her class from Manipal College of Dental Sciences in India and completed another dental degree at the University of British Columbia in

2004. She is also a part-time faculty member and mentor for the UBC Dental Mentorship program.

In recognition of her outstanding achievements, Dr. Randhawa was nominated for the RBC Canadian Women Entrepreneur Awards in 2019 and 2020, presented by Women of Influence. She currently sits on the Philanthropy Development Committee of the BC Children's Hospital Foundation. Dr. Randhawa is passionate about sharing her knowledge with her dental colleagues and educating her patients on the transformative power of their smiles. As a Platinum Invisalign® Provider and Align™ Technology speaker, she is an authority in her field and a true asset to the dental community.

Introduction

As a general dentist, I am always looking for solutions to make the day-to-day activities of my practice easier for me and my staff and more enjoyable for my established and potential new patients. I want to ensure patients have a memorable time so that they look forward to returning and referring their family and friends to become our patients. This may sound ironic, given the reputation visits

to the dentist have had for decades. However, dentistry has changed, and I am proud to be one of those professionals to lead this change.

Last year, I incorporated the Align™ Oral Health Suite into my new patient exam and recall and emergency exam workflows. The process was seamless, and the patient-friendly product interface uses language

familiar to the person sitting in your dental chair, helps patients follow the conversation where they can actively participate and feel part of the process during a consult. Innovations have been developed since then, and I will describe a clinical case of how I have implemented them into my practice, from scanning, diagnosing, designing, treating, and monitoring (*Figure 1*).

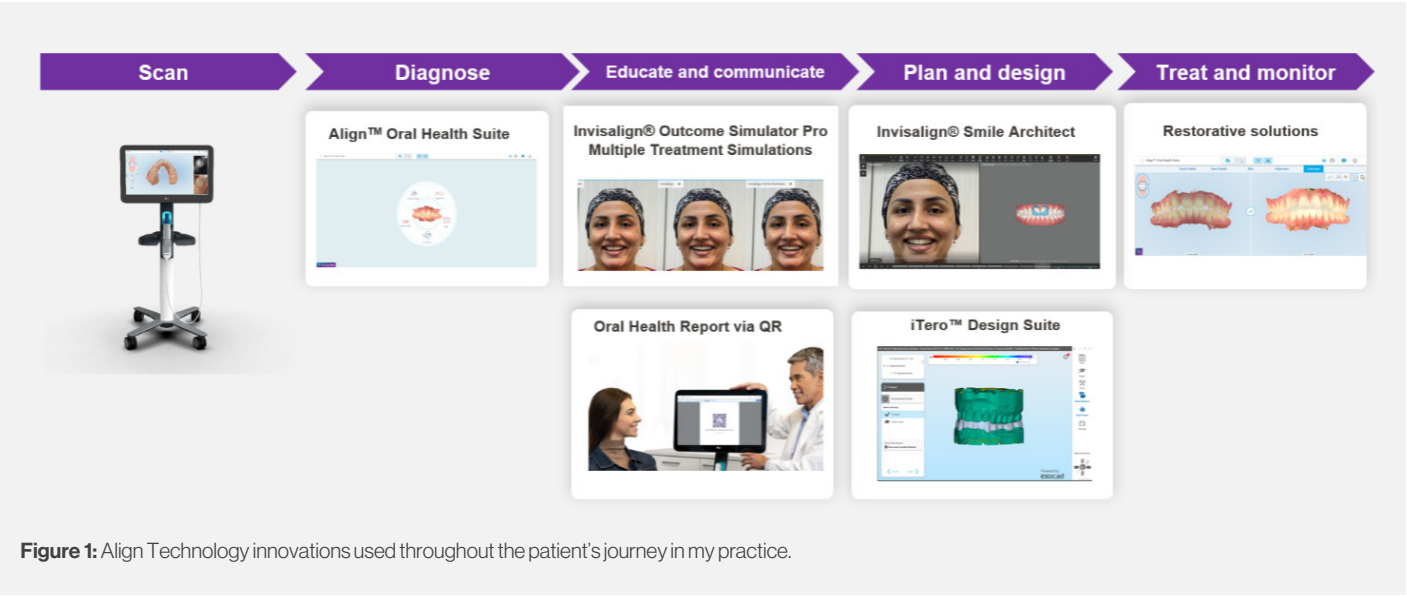


Figure 1: Align Technology innovations used throughout the patient's journey in my practice.

a. Scan

In my practice, we scan every individual, even before they accept any treatment. Why? The iTero™ digital scan has become crucial to communicate and show the patient what the hygienists and the doctor see inside the mouth. It is a quick procedure that allows you to create a digital record that can be used later as a diagnostic and study model, with the advantage of not taking any physical space in your practice when stored in the cloud. The scans can also be submitted to build appliances, including Invisalign® aligners.

b. Diagnose

Digital scans are helpful for me to communicate the clinical findings to my assistants during clinical exams. It is a way to ensure consistency across what I see inside the patient's mouth and what I tell the assistant to record in our practice management software. In a busy dental practice, people talk over each other, and other dental equipment may produce noise, or phones may be ringing, preventing clear communication. Moreover, when you are talking through a dental face mask, it is sometimes difficult for the assistant

to understand. Having a large image with different angles that you can spin around on the scanner, or the computer monitor makes this easier and improves the accuracy of the findings. In addition, you can distinguish colors, textures, types of restorations, and interproximal caries above the gingiva well when using the iTero™ NIRI technology (Near Infra-Red imaging) and the integrated 3D intraoral camera.¹

The Align™ Oral Health Suite provides a structure for me to explain the findings to the patient using easy-to-understand

language, especially when verbal communication is accompanied by images of their own mouths.² A middle-age female patient, who began her treatment in May 2023, was keen on lengthening her upper central incisors. She was well-informed about the potential risks of immediate restoration due to tight contacts and overjet and agreed with the need to correct the angulation of the premolars and molars to improve her occlusion after I showed her the visualizations (Figures 2 and 3).

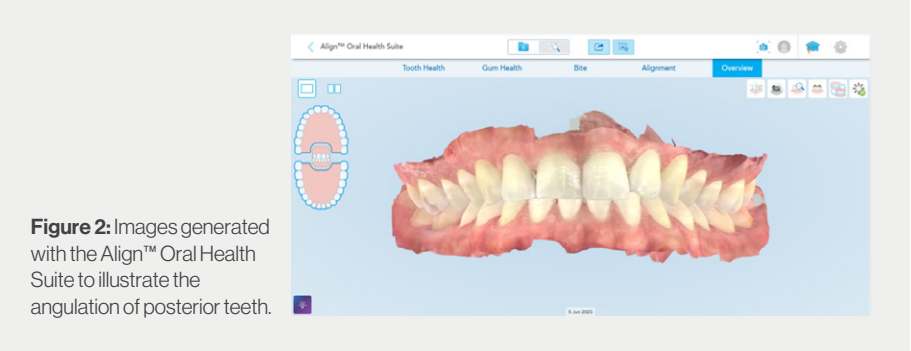


Figure 2: Images generated with the Align™ Oral Health Suite to illustrate the angulation of posterior teeth.

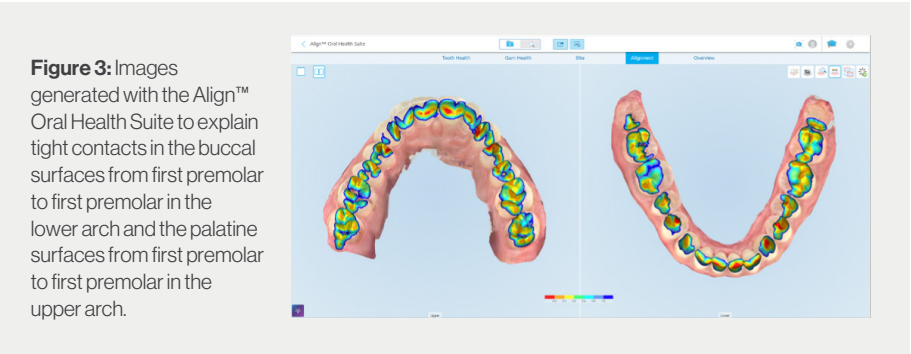


Figure 3: Images generated with the Align™ Oral Health Suite to explain tight contacts in the buccal surfaces from first premolar to first premolar in the lower arch and the palatine surfaces from first premolar to first premolar in the upper arch.

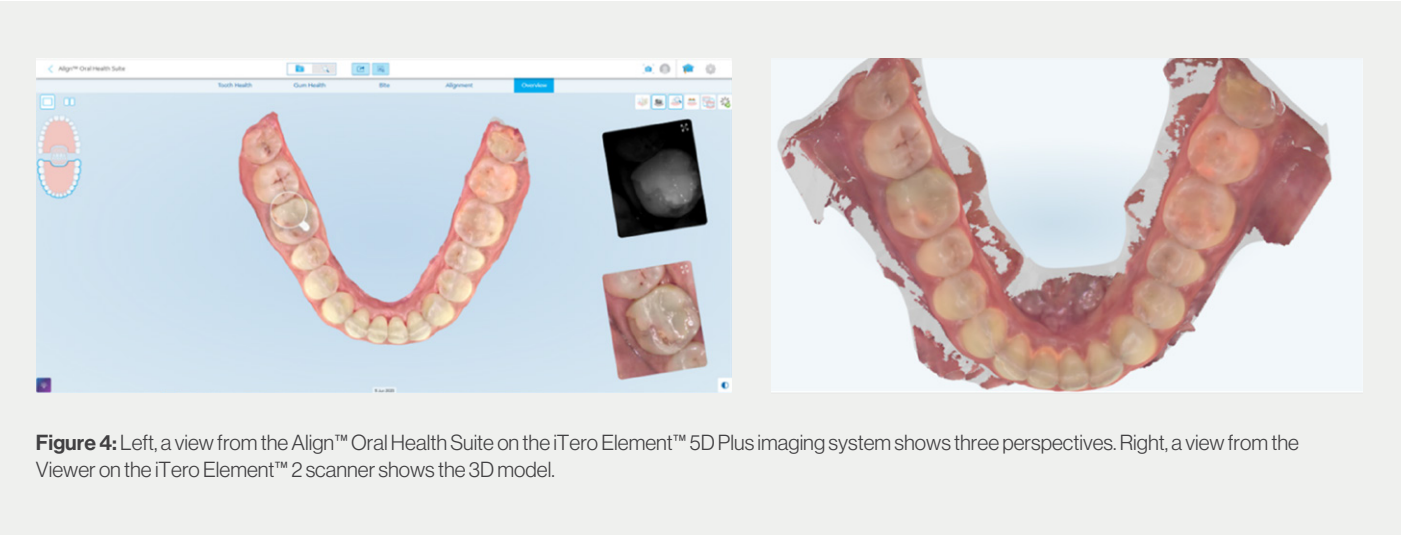


Figure 4: Left, a view from the Align™ Oral Health Suite on the iTero Element™ 5D Plus imaging system shows three perspectives. Right, a view from the Viewer on the iTero Element™ 2 scanner shows the 3D model.

In addition, the patient and I discovered that she needed a crown for the first lower right molar and a composite for the second lower right molar (Figure 4).

c. Educate and communicate

The Align™ Oral Health Suite is versatile in visualizing different dental conditions. You can view the 3D model, the iTero™ NIRI technology (Near Infra-Red Imaging) images, and the integrated intraoral camera all at once, allowing the doctor, the assistant, and the patient to engage in conversations quickly³ and examine every single tooth from three different perspectives (Figure 4). Moreover, you can activate the iTero™ Occlusogram tool or switch color to monochrome to better visualize tooth wear or gingival recessions, for instance.

Within the Align™ Oral Health Suite, you can activate the Invisalign® Outcome Simulator Pro with in-face visualization. I activated the simulator, and within minutes, the patient was visibly impressed by the potential outcome of her treatment with Invisalign® aligners (Figure 5). This powerful tool effectively convinced the patient to prioritize moving her teeth before proceeding with restorative procedures.⁴

One innovation with the simulator is the Multiple Treatment Simulator (MTS).

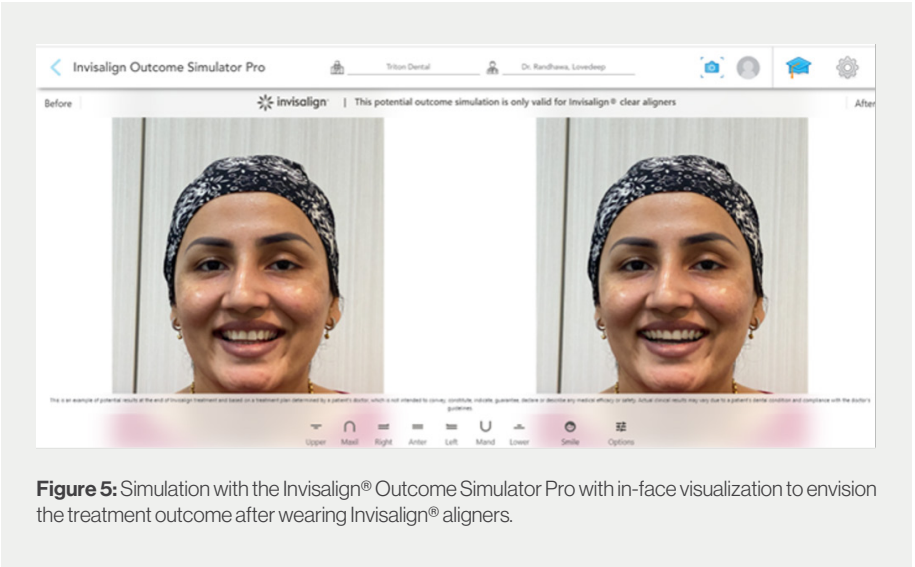


Figure 5: Simulation with the Invisalign® Outcome Simulator Pro with in-face visualization to envision the treatment outcome after wearing Invisalign® aligners.

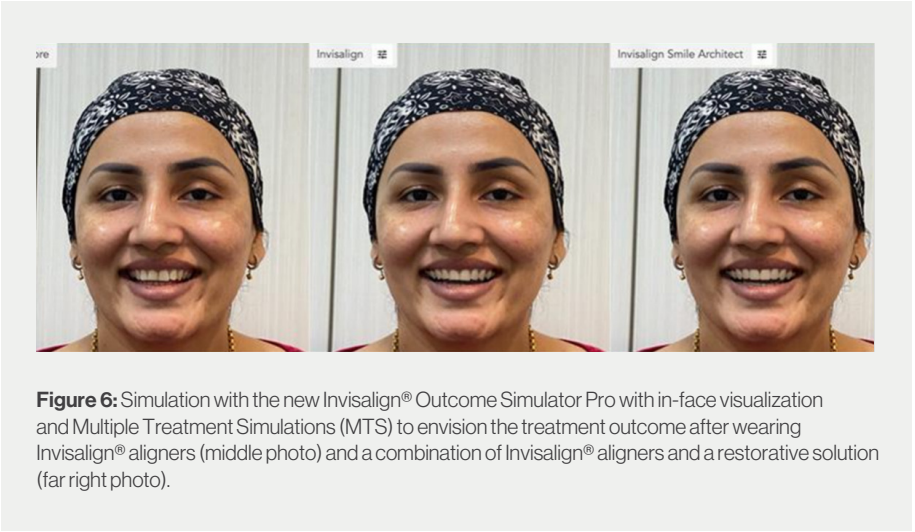


Figure 6: Simulation with the new Invisalign® Outcome Simulator Pro with in-face visualization and Multiple Treatment Simulations (MTS) to envision the treatment outcome after wearing Invisalign® aligners (middle photo) and a combination of Invisalign® aligners and a restorative solution (far right photo).

While initially I was able to simulate treatment exclusively by moving her teeth, now I can simulate her treatment by moving her teeth in combination with

a restorative solution, a step further to help patients visualize the outcomes (Figure 6).

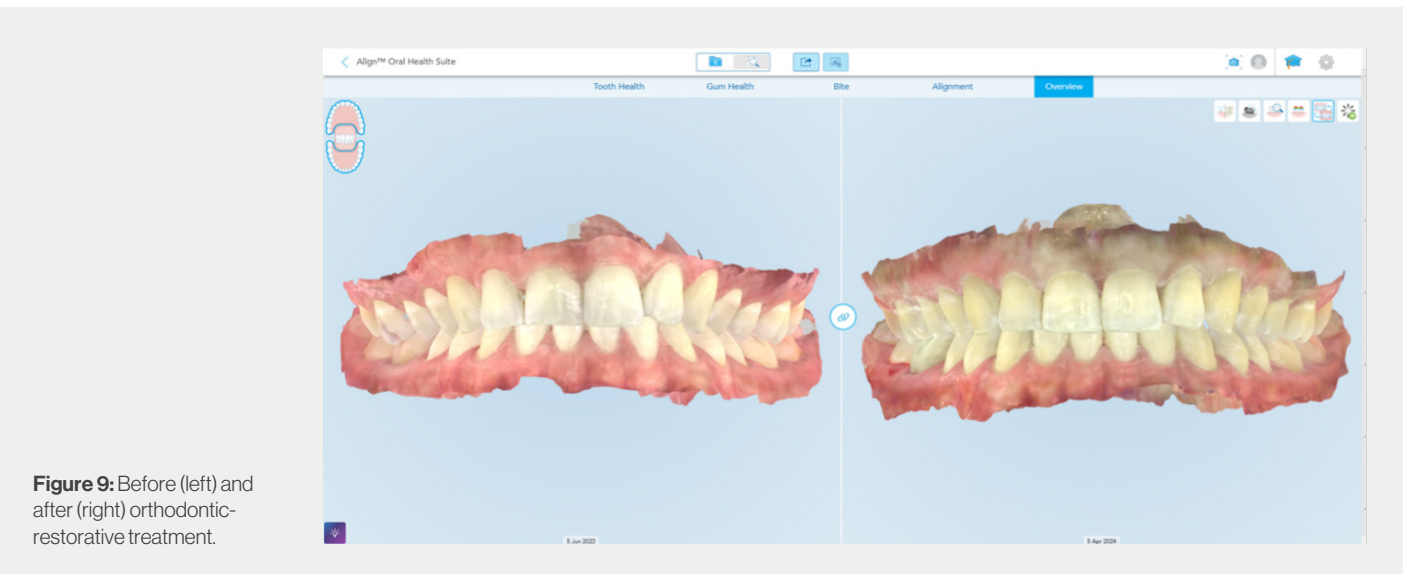
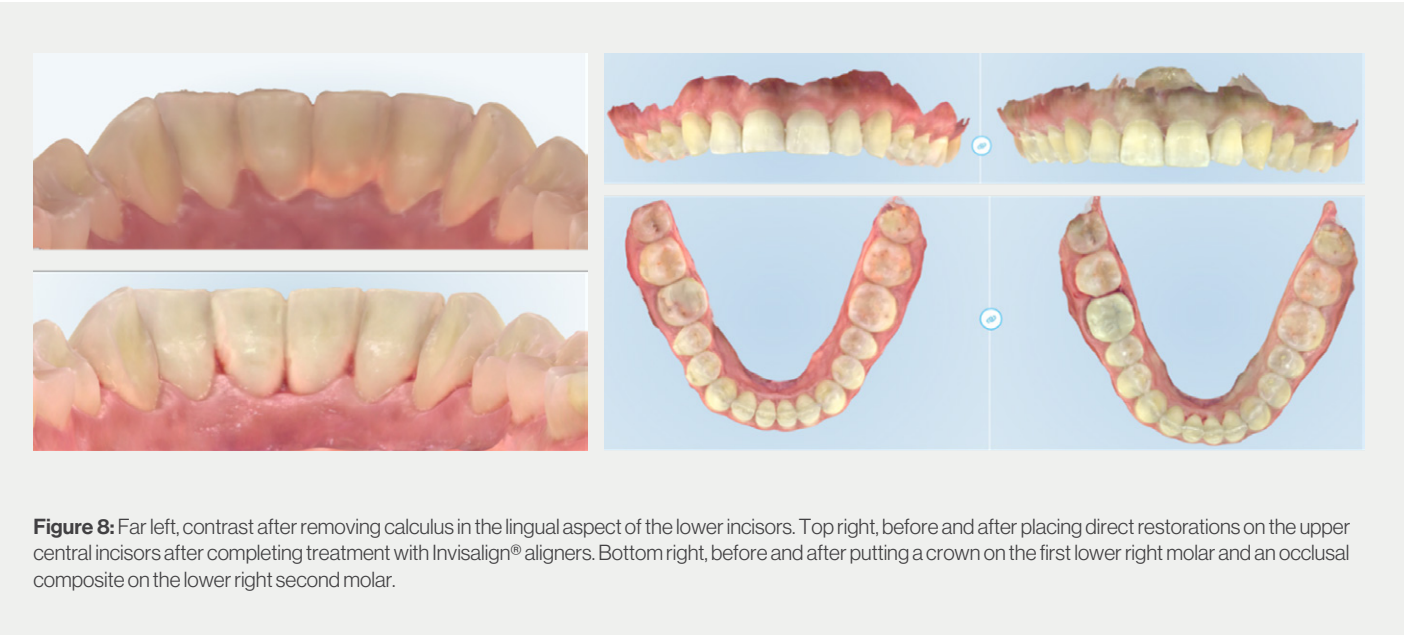
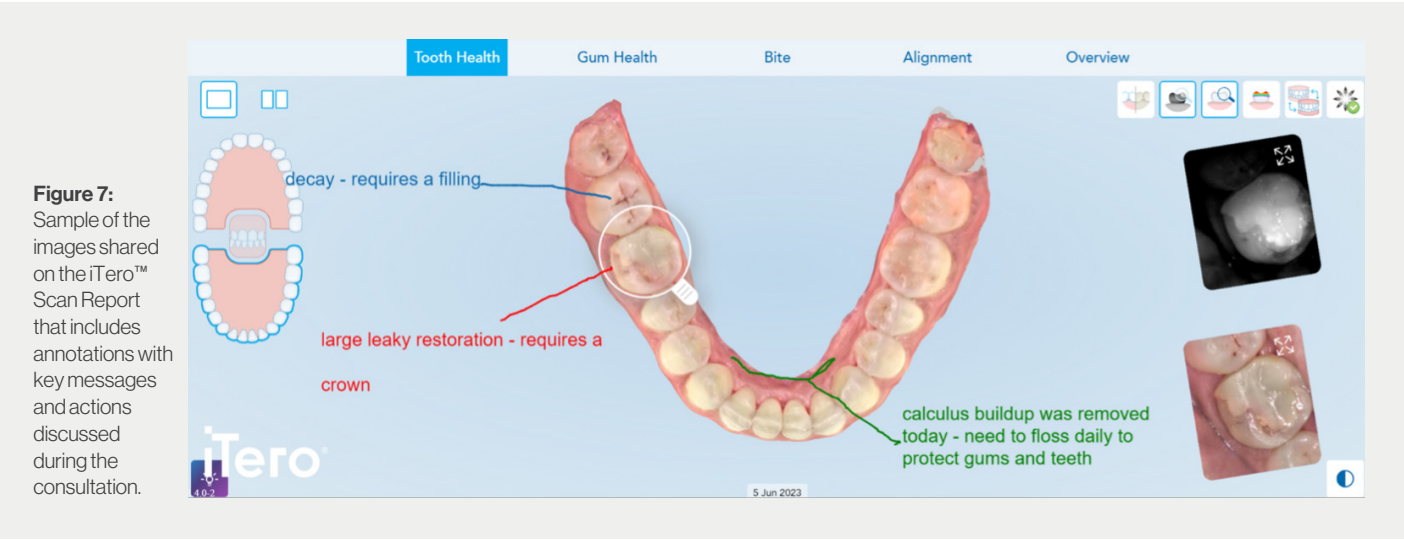
Moreover, I can now share the iTero™ scan report with relevant images and annotations via a QR code. This report is designed for the patient to keep for her records and to share with those who were involved in making financial decisions for her treatment. It also serves as a valuable tool when referring my patients to other specialists. The information patients obtain during a consult could be overwhelming, and this simple digital report will summarize what was discussed in the exam and remember what actions they need to take. It also improves patient engagement from the moment they enter the practice to beyond, when they return home (Figure 7).

d. Plan and design

Innovations for planning tools such as the Invisalign Smile Architect™ software for orthodontic and restorative cases and the iTero™ Design Suite to create veneers, crowns, 3D models, and splints allow me to provide more comprehensive solutions with shorter delivery times since I can have some of them built in house. As a result, I can also potentially reduce laboratory costs while improving my patients' experience who need to come to fewer and shorter visits.

e. Treat and monitor

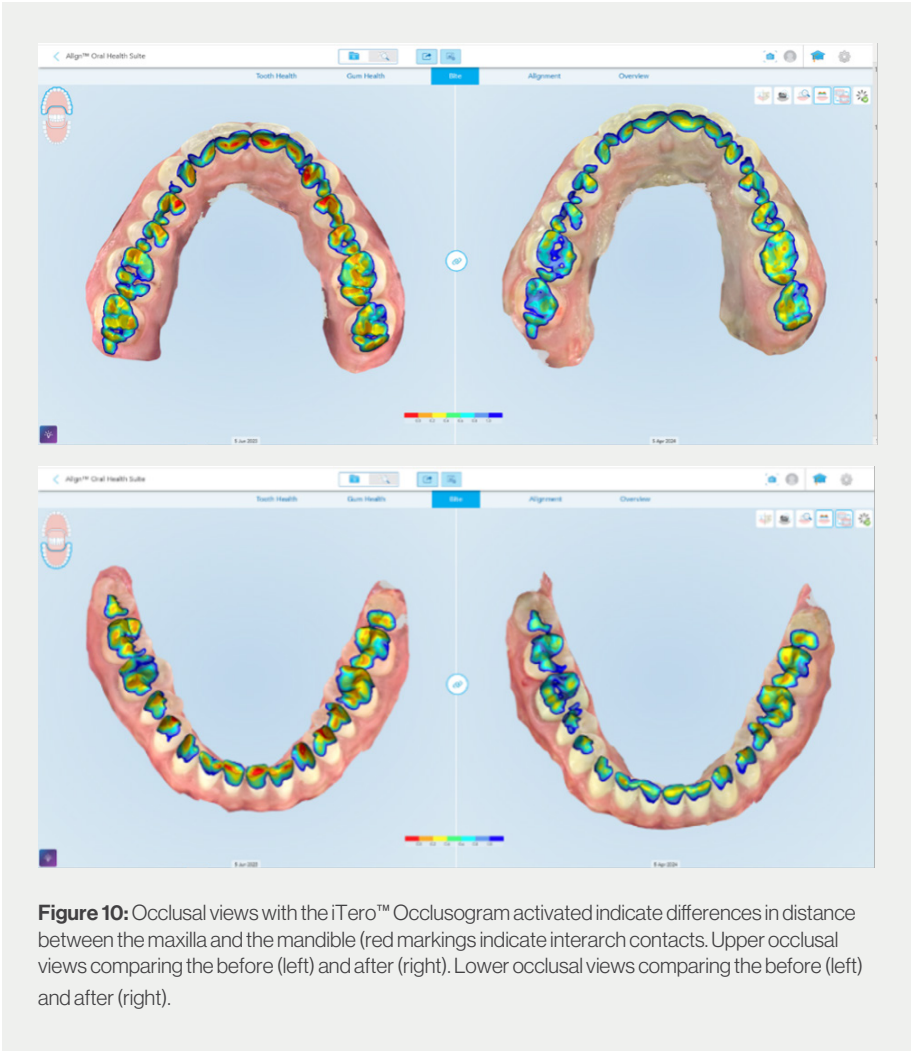
One of the new features of the Align™ Oral Health Suite is the side-by-side historical comparison. For instance, I use it as a quality assurance tool to capture before and after treatment images. This helps patients understand the procedures completed, and they can appreciate the value of our services. More importantly, it serves as a tool to hold patients accountable for their treatment with Invisalign® aligners. If progress is not noticeable, we can use it to find the root cause of



the lack of progress, or the discovery of new dental caries or calculus that have developed over time. Overall, this approach helps to build trust between you and your patient.

We demonstrated to this patient how we removed calculus deposits and what we expect to see from her in terms of oral hygiene to prevent gingival or periodontal disease. Similarly, we showed her the results of the direct restorations in the upper central incisors and the crown and direct restoration in the lower right quadrant after completing the cycle of treatment (Figure 8).

While patients will likely see and notice changes in the aesthetic areas (Figure 9), the side-by-side historical comparison allows you to showcase how the occlusion improved (Figure 10). This information is valuable to the patient to feel confident of the work completed and provides assurance and reinforces that trust. You can expect more direct referrals from them, which is a positive sign for the growth of our practice and keeps us motivated.



Implications in efficiency and practice growth

When this patient came into my practice for the first time in 2019, she did not accept treatment with Invisalign® aligners, and we completed an exam and a cleaning. At the time, I had a different mindset, and I did not have tools such as the Align™ Oral Health Suite and iTero™ scanner to enhance my consults. These tools have since become invaluable in my practice, allowing me to scan every potential patient and significantly improving my consults. In fact, back then, I only scanned those who were ready to start treatment with aligners. I did not even use iTero™ scanners as

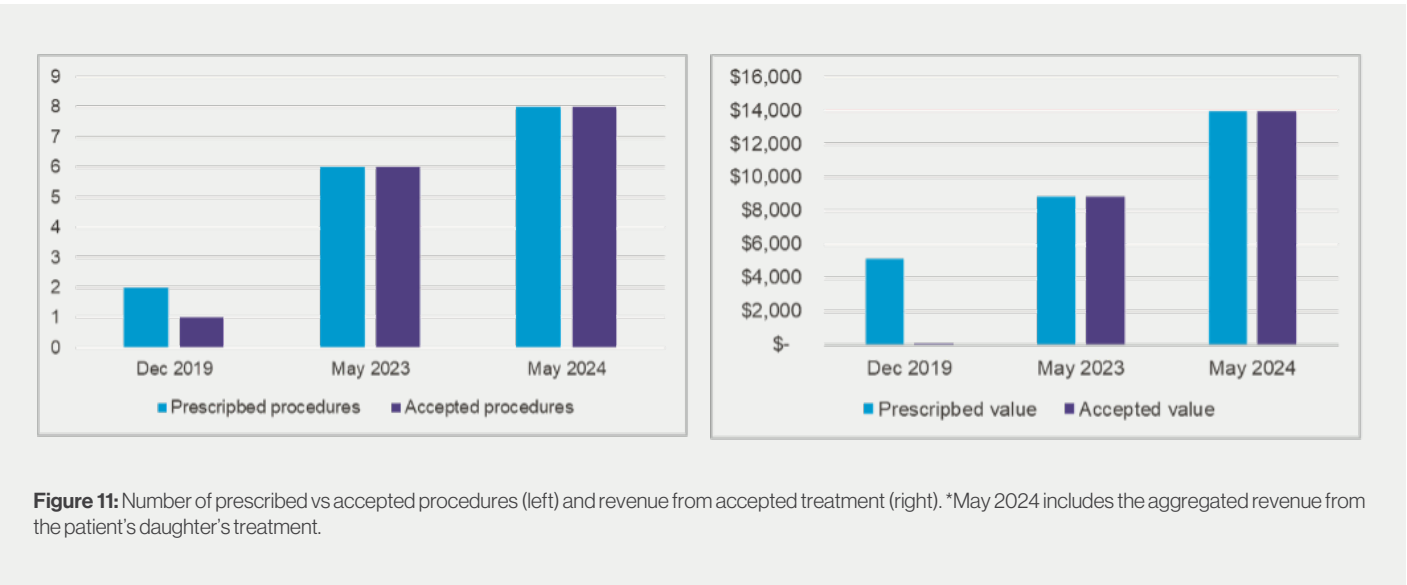
a communication tool nor as a digital impression device for restorative procedures.

Fast forward three and a half years, I had changed my mindset as a dental provider and had the vision to scan every potential patient. In addition, I had a tool that provided me with the structure to conduct my consults. I see the difference in the conversations and the treatment acceptance.⁵ For instance, in May 2023, this patient understood why I had to move her teeth first, and she accepted all the prescribed procedures. While she decided to delay veneers for her upper central incisors, she opted to get direct composites in the interim. She decided not to get the veneers so that her daughter could start with Invisalign® aligners. This selfless decision clearly indicated her trust in our practice, and I gained a new patient, reinforcing the

importance of patient acceptance and trust in practice improvement. Increasing patient understanding impacted treatment acceptance and consequently revenue (Figure 11).

The digital solutions provided by Align Technology help us to establish trust with our patients, develop comprehensive treatment plans, and achieve the best clinical outcomes. As a result, we also receive direct referrals, demonstrating our patients' trust and satisfaction with our services. These referrals help us to consistently meet the demand for our services, as we have set ourselves apart from other providers in my community. Additionally, the time saved through shorter chair time and fewer required visits allows me to increase the capacity to schedule more appointments and procedures or to have more time for teaching and spending with my family.

1. iTero Element 5D intraoral scanner is the first integrated dental imaging system that simultaneously records 3D, intra-oral color and NIRI images and enables comparison over time using iTero TimeLapse. "Data on file at Align Technology, as of December 4, 2018.
2. 100% of surveyed doctors agree Align™ Oral Health Suite helps build patient understanding and trust in their diagnosis and treatment recommendations. "Based on a global survey in October 2023 of n=41 Invisalign trained doctor respondents who utilized Align Oral Health Suite 20 times or more during the global limited market release period of August 2023 to October 2023, representing both GPs (n=27) and Orthos (n=14) in NA, APAC, EMEA, and LATAM. Doctors were asked: "Please indicate your agreement with the following statement: Align Oral Health Suite helps build patient understanding and trust in their diagnosis and treatment recommendations." Agreement scale is 1-4 with 1 being "strongly disagree" and 4 being "strongly agree." Data on File at Align Technology, as of November 17, 2023.
3. 100% of surveyed doctors agree Align™ Oral Health Suite helps increase patient engagement. "Based on a global survey in October 2023 of n=41 Invisalign trained doctor respondents who utilized Align Oral Health Suite 20 times or more during the global limited market release period of August 2023 to October 2023, representing both GPs (n=27) and Orthos (n=14) in NA, APAC, EMEA, and LATAM. Doctors were asked: "Please indicate your agreement with the following statement: Align Oral Health Suite helps my practice increase patient engagement." Agreement scale is 1-4 with 1 being "strongly disagree" and 4 being "strongly agree." Data on File at Align Technology, as of November 17, 2023.
4. 90% of surveyed doctors agree they increased patient treatment acceptance utilizing Align™ Oral Health Suite. "Based on a global survey in October 2023 of n=41 Invisalign trained doctor respondents who utilized Align Oral Health Suite 20 times or more during the global limited market release period of August 2023 to October 2023, representing both GPs (n=27) and Orthos (n=14) in NA, APAC, EMEA, and LATAM. Doctors were asked: "Please indicate your agreement with the following statement: I increased patient treatment acceptance utilizing Align Oral Health Suite (treatment acceptance includes hygiene treatment, restorative procedures, and orthodontic cases)." Agreement scale is 1-4 with 1 being "strongly disagree" and 4 being "strongly agree." Data on File at Align Technology, as of November 17, 2023.
5. iTero Element scanners, scientifically proven accuracy for your clinical restorative needs*Accuracy defined as a combination of trueness and precision tested on different substrates, under different lighting conditions, for crown preparation and full-arch scanning. Based on the results of 12 peer-reviewed papers 2018-2020. Data on file at Align Technology, as of November 20, 2020.



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