The Effects of Enlarged Adenoids on a Developing Malocclusion

Dental Digital Photography Advice

Evaluation of Patient Airways

Manage Your Practice at the Same High Level as You Perform Dentistry
DO’s & DON’Ts for DENTAL DIGITAL PHOTOGRAPHY

By Shannon L. Pace, DA II

Clinical digital photography is probably the most important tool for communication in the dental office today. Digital photography allows the dental team to educate the patient without having to hold a mirror and try to explain what is being changed or enhanced. And, digital photography can be fun and exciting – everything from patient education to laboratory communication can be expedited with the click of a button. Excellent photography will elevate patient’s records to an entirely new level.

Before digital cameras, every dental practice I worked with used the Lester Dine slide camera and slide film (Kodak Ectachrome 100, Kodak Dental Systems). The film and processing fees could cost as much as $40,000 per year. Many also used intraoral cameras for new patient consultations, which allowed them to be stored in the patient’s file. However, these pictures were often stored in several different places, and the team would have to search the patient’s chart in order to find them. Now, by using a digital camera, not only can the cost of film be eliminated, but the camera equipment itself is easier and skills taught easily.

Types of Digital Cameras

Choosing the right digital camera depends on the goals of the practice. It could be for Aacd accreditation, marketing, classroom instruction and education as well as laboratory communication. The three most popular cameras on the market today are:

- Canon 20D (Canon USA).
- Fuji S2 (Fuji Film)
- Kodak Easy Share (Kodak Dental Systems).

The Canon 20D and the Fuji S2 have a detachable ring flash for portrait photography. They have a variety of settings that allow you to capture a full smile or fill the frame with a single tooth. Both of these cameras also allow you to shoot on a raw setting for pictures that can’t be altered by software programs like Photoshop, a requirement for the Aacd accreditation. The Kodak camera is a good camera, but you may not be able to get close intraoral shots like the Canon or the Fuji. Each team must decide what works for the office and how these pictures will ultimately be used.

Camera Cards

One of the most important items to remember is to always have more than one memory card in the office. If something happens to the primary card, there should be a backup. We recommend that every dental office have at least two cards per office. Or, each team member who uses the camera could have their own card and have the responsibility of downloading his/her own pictures. If images should be mistakenly deleted, there is software available that can retrieve the lost pictures which can be purchased at your local camera store to restore.

Setups are made for specific dental procedures specifically for digital photography. The tray setup for taking these pictures should include:

- Retractors: Plastic and Metal
- Mirrors: buccal and occlusal mirrors with handles
- A Black background paddle

Experimenting with different retractors and mirrors will allow you to decide what works best in your office.

Backgrounds

When taking portrait photography, the background choice is very important. Neutral light backgrounds are best. Blue, gray and beige colors are recommended for the contrast between the patient’s hair and background. These can be purchased through your local camera shop or you can make your own. Glue or tape some photography paper to a piece of 2’ x 3’ foam board. This will create a background that can be held by another team member while shooting these photographs. This board can also be placed directly behind the patient while they are sitting in the dental chair. If your office has the space, you can also use a shade that can be pulled down when portraits are being taken.
Selecting the Proper F-Stops

The F-Stop must be set before taking the pictures. A higher F-Stop setting will result in a smaller aperture opening. This will restrict light from entering and hitting the computer chip in the camera. Always use the highest f-stop possible to capture the greatest depth of field. Depth of field refers to what portion of the image will be in focus. Portraits will be exposed to F-Stops at 5.6 and 6.3 when the patient is far away from the camera and the light. High levels of light are needed for the camera to create a clear image. When taking intraoral photographs, the F-Stop should be at 22 and 32 because the camera and the light source are closer to the subject and less light is needed to make a clear image.

Recognizing Patients

When prospective patients come in for a new patient consultation, we interview them and take digital pictures to aide and communicate the treatment the patient may or may not need. This also allows the team to remember who the patient is if treatment has to be delayed or in case that patient comes back months or a year after the initial consult. In some practices, these photographs are placed in the front of the patient’s chart so when the chart is pulled, the patient can immediately be recognized by the team. Our office takes four frames: full face, retracted smile, and retracted mirror shots for both the maxillary and mandibular arches.

AACD Format

In our office, the standard AACD (Academy of Cosmetic Dentistry)-accredited photographs are used to be consistent with a series of 12 required views. The entire dental team should be trained to take photographs using the same techniques and this standard format will ensure consistency. These 12 requirements were designed and produced specifically to give the dentist guidance related to photographic requirements for the AACD accreditation review presentation. These are 24 slides 12 before and 12 after images. All photographs being submitted for accreditation must be in RAW format which means the pictures can’t be altered.

Full-Face Portrait Photography

This shot is framed horizontally. (Figure 1) The full-face view should show the top of the head to just below the chin. The nose should be in the center of the portrait, which will place head in the center of the frame. The patient should be instructed to stand with straight posture. Some patients like to tuck their chin down; if this occurs, place your hand under the patient’s chin and ask them to stick out their chin. This gives the appearance of separation between neck and chin. If the patient blinks in the flash, have them turn their head and count to three, looking ahead on three to take the picture. This will take their mind off the camera. Some patients have difficulty smiling or
have an acquired smile as a result of low self-confidence. Some common errors are head tilting or the head being outside of the center of the frame. The camera may also be too high or too low in relation to the patient.

Full-Smile / Frontal View 1:2
The central incisors are the focus of the full smile, frontal view. (Figure 2) This view should include the corners of the mouth, and the patient should exhibit a full, natural smile. The nose and the chin should not be in the frame, and the smile should show an equal amount of skin below the lips. The camera should be at the same level as the patient. Encourage the patient to give an exaggerated smile to show as many teeth as possible. Make sure there is no evidence of saliva, food, lipstick, impression material, plaque or other distracting debris in the picture. Avoid problems with your shots by watching how the head is tilted back and angled. Avoid hanging over the patient. (Figure 3) Placing the head too far forward and back (Figure 4 A,B & C) with both full smile and lateral views can lead to problem shots. When the face is level and the camera angles are set the resulting picture is just right. (Figure 5)
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**Ms. Kay Gerety**
Full-Smile / Right & Left Lateral Views 1:2
The lateral smile view is made with the lateral incisor as the focal point and center of the image. (Figure 6, Figure 7) The frame of the picture should include the upper and lower lips, as well as equal amounts of skin above and below the lips. Once again, the camera should be at the same level as the patient. The relationship of the anterior teeth to the lower lip is important in the view, as you want to avoid taking this photograph like a profile photograph.

Upper & Lower Teeth / Frontal View 1:2
The upper and lower teeth should be slightly parted so the incisal edges are visible. (Figure 8) The retractors should be minimally visible and the lips should not approach the frame. The maxillary central incisors are the focal point of this image. The camera lens should be parallel to the plane of occlusion to avoid creating the appearance of occlusal discrepancies, which may not be present. Avoid tilting or off centering the frame and be sure that the camera is neither too low nor too high in relation to the face.

Upper & Lower Teeth / Right & Left Lateral View 1:2
The upper and lower teeth should be slightly parted so the incisal edges are visible. (Figure 9, Figure 10) The retractors should be minimally visible and the lips should not be in the frame. The frame of this picture should include the upper and lower lips and equal amounts of skin above and below the lips. The camera should be at the same level as the patient. The relationship of the anterior teeth to the lower lip is important in this view. Once again, avoid taking the view like a profile.

Treated Teeth Including Incisors (Upper or Lower) / Frontal View 1:1
The upper or lower central incisors (depending on which arch is treated) should be centered in this view. There should be no lip or cheek tissue or retractors visible in the image. The opposing teeth should not be visible in the frame. Be careful that the camera angle is not too low or too high.

Treated Teeth Including Incisors (Right & Left) / Lateral View 1:1
The right or left lateral incisors (whichever arch is being treated) of the upper or lower teeth should be centered in the frame. There should be no lip or cheek tissue or retractors visible in the image. The opposing teeth should not be visible in the frame. Be careful that the camera angle is not too low or too high.
Upper Arch / Occlusal View 1:2

The upper arch occlusal view is always taken as a reflected view using a high-quality mirror. (Figure 11) The lips and cheeks should be retracted for all the gingiva to be seen in the arch. The distal of the second molars should be in the frame. You should not see any lower teeth in this picture. By using a mirror that has a handle, gloves and fingers will not been seen on the edges of the mirror. Ask the patient to lift the head with their chin up. This will allow the tongue to relax. The mirror should be placed a little further back for those last molar shots. To keep the mirror from fogging up, run it under hot water. It may also be necessary to blow air across the mirror. Avoid the facial surface being cut off in the frame, and keep the patient’s nose out of the frame.

Lower Arch / Occlusal View 1:2

The occlusal view is always taken as a reflected view using a high-quality mirror. (Figure 12) The lips and cheeks should be retracted for all the gingiva to be seen in the arch, and the distal of the second molars should be in the frame. The mirror should not rest on the lower posteriors since this allows an image of the upper posterior to be in the frame. By using a mirror that has a handle, gloves and fingers will not be seen on the edges of the mirror. Ask the patient to lift their head with their chin up. This allows the tongue to relax. The mirror should be placed a little further back for those last molar shots. To keep the mirror from fogging up, run it under hot water. It may also be necessary to blow air across the mirror. Avoid the facial surface being cut off in the frame, and keep the patient’s nose out of the frame.

Proper digital photography is crucial not only to the esthetic dental office, but also for the office reaching for that next level of care and should become apart of the everyday routine. Without photography, the patient will often forget how they used to look; I did when I had my own teeth done. Heaven forbid you should ever have to go to court. Remember there is no better record than a photograph. It is important and should become a part of your everyday routine.

Ms. Shannon Pace

A 1994 graduate of the Dental Assisting Program at Bowman Gray School of Medicine, Ms. Pace works with Dr. John Cranham in his private practice in Chesapeake, VA. She is a Faculty member at the Dawson Center where she conducts the Complete Dental Assistant Courses. A widely recognized lecturer for dental assistants, Ms. Pace is a past president of the Metrolina Dental Assistants Society, a member of the advisory board for the dental assistant program at Central Piedmont Community College and writes a clinical column for Dental Assistants. A member of the AAD, Shannon Pace can be contacted for information on Dental Assistant Programs at 757-647-4114 or by email at: shannonlpace@aol.com.

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