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Dental Photography: A New Perspective; Part II, Techniques

TEXT SIZE

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Introduction

Part one of Dental photography: A New Perspective (Oral Health, December 2009) described two types of photographs used in dentistry. The traditional dental photograph "record keeping"; with prescribed poses, magnification ratios, and lighting is a factual record of a dwental subject. The second type of photograph described is used to communicate a dental message, either to the patient, a lab, a referral doctor, or in presentations or marketing. The communication dental photograph follows artistic or general photographic principles of "story telling" and artistic design. The subject is the same-teeth, oral and peri-oral anatomy; however the techniques used to take the photograph follow good photographic guidelines.

A quality SLR digital camera with attached macro lens and macro flash or a point-and-shoot camera with an attached close-up attachment* can be used to take quality dental communication photographs. (Fig 1a,b) Remember, cameras are important, but photographic technique and photographic style are more important.

Accessory items used to create communication photographs include: Cheek retractors, mirrors, contrasters, on camera and off camera flash. (Fig 2, 3a,b, 4) Simplified portraits also use backgrounds* and reflectors* (Fig 5, 6)

This paper describes "artistic" techniques which enhance the visual quality of dental photographs with minimal interruption to practice.

Camera Settings

Lens f-stop should be set to as high a number as possible and shutter speed above 1/100 (Fig 7). To assure maximum focus sharpness. ISO setting should be between 100 and 200 for highest resolution.

A Macro Flash adequately lights the dental subject. Ring lights de-emphasize detail while point lights can cause excessive shadows. A twin point light can be used to highlight and also reduce shadows. Point lights also can be rotated to direct light on important subjects. (Fig 8)

Proper White Balance is one the most important camera settings to obtain accurate color. Custom white balance is the most accurate white balance for dental photography. With the camera, lens and flash set for optimum quality, a photo is taken of an 18% gray card. The photo is used as a reference for the Custom White Balance setting for all dental photos taken at the same camera setting. (Fig 9a,b, 10a.b,c, 11) (See your Camera instructions for specific steps in custom white balance)

I suggest you purchase your dental camera from a company which supplies the camera system adjusted for optimum dental use and a "quick start"* guide to reset your system when camera adjustments are deliberately or unintentionally changed. (Fig 12)

Anterior or Smile Photos

"Record" or factual anterior photographs, with or without cheek retractors lack attractive or artistic appeal. An additional off camera flash wirelessly synchronized with the macro flash, and the photo taken at an off angle position creates attractive lighting and beauty to a common dental photograph. (Fig 13, 14) Use Contrasters* to hide distracting oral tissues and emphasize teeth against a black background. (Fig 15)

Occlusal Photos

Maxillary and mandibular occlusal photos are difficult to capture without excessive lip, nose or vestibular tissue distracting the image of the teeth. Occlusal contrasters* hide much of the distracting tissue and keep lips, nose and hair hidden with a black border. Using a Combo Mirror* or Universal Mirror Handle* allows firm control of the mirror and keeps fingers out of the photograph. The same technique is used to capture quadrant or individual occlusal surfaces. (Fig 16, 17, 18, 19)

Anterior Profile Photos

The "handle" of an Occlusal Contraster* can be placed between the teeth and the cheek to give a black background for anterior profile photos. Lighting should be directed toward the facial surfaces of the teeth. (Fig 20)

Lateral Photos

With Cheek retractors in place and the teeth closed, a "buccal" mirror is placed against the cheek parallel to the occlusal plane. All the teeth should be visible in the mirror. The flash is directed onto the mirror to allow the light to illuminate all the teeth. A combo mirror* or mirror handle* is essential to keep fingers out of the photograph. The same technique is used to photograph the facial surfaces of one or all of the posterior teeth. (Fig 21, 22)

Lingual Photos

The lingual surfaces of mandibular teeth are difficult to photograph without the use of a mirror designed with a deep concavity to allow placement over the anterior teeth. The Buccal #3 Mirror* gives visual access to lingual surfaces of mandibular and maxillary posterior teeth. Place the mirror between the teeth and the tongue and direct the flash on to the mirror, which illuminates the teeth. (Fig 23)

Shade Photos

Shade communication is not 100% accurate using photographs. Several techniques are used to maximize accuracy using your dental camera. Use your optimum camera settings for macro photography. Place cheek retractors, dry the teeth. Hold one or more shade tabs close to and parallel to the teeth with the tab identification visible. Use a anterior contraster, 18% gray card or neutral color tab** behind the teeth. Take a photograph and evaluate that neither white highlights or shadows obscure the teeth or tabs. (Fig 24)

One alternative is to use a "Rite-lite" ** shade matching light as the light source. You must change the settings on your camera before proceeding. Change the White Balance to K, and then dial to 5500. The 5500K setting matches the light color of the "Rite-lite". Reset your camera settings to "P" and the ISO to 1000. Take the photograph through the "Rite-lite". Your depth of focus will be short, and the photograph may not be completely in focus, but the white balance of the camera and the light source will be the same. I have several laboratories using this method with good results. Remember to reset your camera back to your optimum dental photography settings. (Fig 25, 26a,b)

Annotations on Photos

Writing on photos enhances the value of your dental photos as a communication tool. Laboratories are given a clear direction to follow; referrals to specialists have a clear idea of what you are requesting or want for your patients. When you send photographs to patients with writing on the photographs, you increase the opportunity to communicate clearly about their dental condition, needs or what care you have provided. Even with our best intention to make our photographs tell our story, written words on the photographs enhance our message. (Fig 27-29)

Annotations on photographs require either a PC with graphic functions, or the use of a graphics tablet attached to our computer. Tablet PC's have software to annotate. Other software is available to use on a Tablet PC or with graphic tablets. After writing on the photos using the enabling software, the photo with writing is saved as a new file. This file then can be shared with the person you want to receive the message. This tool is one of the most powerful tools we have in dentistry to communicate our message.

Portrait Photos

Dental/Medical portraits are not attractive. If you use portraits as a communication photograph, it must portray the person as attractively as possible. Huefner has described portrait techniques that rival any professional studio portraits. Huefner's techniques however require adequate space for full professional lighting and backgrounds. Dunn and Young have suggested a simplified technique that can be used in any dental office with a dental chair, a wall or a hallway. (Fig 30)

The simplified portrait technique requires a dental camera with an attached external flash* with a diffuser*, a non-reflecting back drop*, a 21" folding white reflector* and a white ceiling. If a white ceiling is not available, a larger white reflector can be used as a false ceiling. (Fig 31)

Camera settings are f5.6-f8. (Fig 32) If your photographic space is small, you may need to use a lens with a zoom range between 20-105mm. The flash with its diffuser is aimed at the ceiling. The patient holds the reflector to allow the light from the ceiling to bounce off the reflector into the patients face, filling in shadows. The patient is approximately 1 foot from the backdrop. This portrait set-up gives similar results to a three light effect. The results are very attractive and simple for the dentist or staff to take and show to the patient. (Fig 33)

Posing the patient is one of the more difficult challenges for any portraitist. Sources for posing suggestions are listed at the end of this paper. Have the patient sign a photo release. The best photo release for your location can be obtained from your Dental liability carrier.

Dental Photos as an Art Form

Dental photos can be effective when taken as "snapshots", but become attractive communication tools when taken following established guidelines of general photography and art. Little effort is required to make your dental photos attractive to patients, laboratories, referrals, and to prospective patients. The payback in perception of quality and skills can be rewarding. OH

*Items marked with * are available from PhotoMed, Inc. 14141 Covello St. Bldg 7 Ste C, Van Nuys, CA 91405 818 908 5369*

*Rite-lite** is manufactured by AdDent Inc. and available through Dental Supplies Houses.*

References

1. Dunn, James R. Dental Photography: A new Perspective, December 2009, Oral Health J (a list of helpful references at the end of this paper)

2. Additional posing suggestions found in Hair styling magazines and in photographic portrait books available at booksellers and Photographic supply stores.

3. James R. Dunn DDS practices in Auburn, California

4. Richard A Young DDS practices in San Bernardino, California.

Oral Health welcomes this original article.

@ARTICLECATEGORY:587;

Photos

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Caption: Figure 1a&1b-SLR and Point & Shoot Dental camer...

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Caption: Figure 2-Metal cheek retractor.

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Caption: Figure 3a&3b-"Combo" mirror and #3 "buccal" mirrors...

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Caption: Figure 4-Anterior Contrasters.

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Caption: Figure 5-Portrait Backdrop.

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Caption: Figure 6-Portrait reflector.

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Caption: Figure 7-Suggested Camera settings for dental photograp...

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Caption: Figure 8-Twin Flash for Dental Photography.

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Caption: Figure 9a&9b-Custom White Balance targets.

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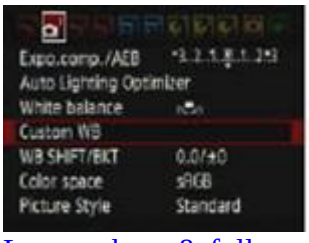

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Caption: Figure 10a,10b&10c-Camera Menu settings for Custom ...

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Caption: Figure 11-Camera settings for Custom White Balance.


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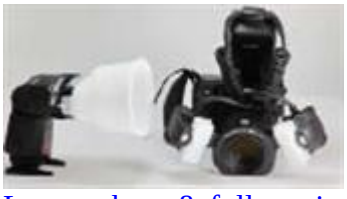
Caption: Figure 12-Dental Camera :Quick Guide".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Caption: Figure 13a&B-Camera and off camera flash for "glamo...


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Caption: Figure 14-"Glamour" smile photo.

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Caption: Figure 15-Anterior Contraster behind anterior teeth.

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Caption: Figure 16-Occlusal Contrasters (3 sizes).

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Caption: Figure 17-Maxillary occlusal with contraster.

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Caption: Figure 18-Mandibular occlusal with contraster.

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Caption: Figure 19-Quadrant occlusal.

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Caption: Figure 20-Anterior Profile with contraster.

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Caption: Figure 21-Laterial photo with "Combo" mirror.

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Caption: Figure 22-Lateral closeup with "combo" mirror.

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Caption: Figure 23-Lingual photo with #3 "buccal" mirror.

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Caption: Figure 24a&B-Shade photos with contraster and 18% g...

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Caption: Figure 25-"Rite-lite" 5500K lighting and neutral backgr...

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Caption: Figure 26a&b-White Balance setting and shade photo ...

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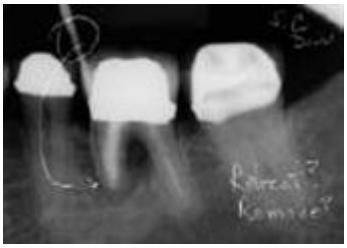

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Caption: Figure 27- Annotations with Radiograph.

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Caption: Figure 28-Annotations for Periodontal treatment.

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Caption: Figure 29-Annotation on B&W photo of shade value.

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Caption: Figure 30-Simplified portrait set-up in hallway.

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Caption: Figure 31-Alternative portrait set-up.

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Caption: Figure 32-On-camera settings for portrait.

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Caption: Figure 33-Simplified portrait.

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