DENTAL PHOTOGRAPHY

Photographs of the Face for Publication and Presentations

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PHOTOGRAPHS of a patient's face provide an enormous amount of information for to guide diagnosis and treatment planning, as well as to document preoperative and postoperative conditions. For these purposes, there are basically 2 types of photographs: the frontal view and the profile view. This article presents a reliable approach to obtaining frontal and profile photographs of the face. Careful use of the equipment and techniques described in this article will enable the clinician to make useful full-face and profile records of patients when needed.

Equipment and Materials

A single-lens reflex (SLR) camera system with a 90 mm or longer focal length is needed. Shorter focal lengths tend to distort the subject's face in the image, a phenomenon known in general photography as "barrel distortion." Barrel distortion is a lens effect resulting in images that are "spherized" at their center (Figs 1 and 2).

A nonreflective background of black, light gray, or light blue is commonly used. A white background does not provide sufficient contrast with the subject. A piece of cloth or cardboard attached to the wall with thumbtacks provides a suitable background for photographs of the face.

Illumination of the subject and the background is obtained with 2 studio flashes attached to the camera or activated by a remote-control unit. Flash units used in intraoral photography can be used, but these may not illuminate the subject properly, resulting in the appearance of undesirable shadows in the background.

The ultimate function of the image may govern the choice of format to be produced. For presentations using 35-mm slides, the height of the screen may complicate projection of vertically oriented images. With a PowerPoint presentation, however, a portrait image can be formatted that fits within the limited space of a projecting screen.

The Technique

Position the subject about 4 feet in front of the background and directly in front of the camera. This will avoid any undesirable shadows from the subject on the background. If the subject cannot be positioned far enough forward from the background, use a black background to minimize shadows. A piece of black velvet is ideal, because the fabric will absorb all light. A major disadvantage of a black background, however, is that sufficient contrast may not be provided for subjects with dark hair, causing part of the image to be lost in the background (Fig 3).

Place the studio flashes at an approximate 45-degree angle in relation to an imaginary line between the camera and subject (Fig 4). For a frontal view, position the subject facing directly toward the photographer. Make sure that the interpupillary line is be parallel to the horizontal lines of the photograph. For a profile photograph, have the patient face toward the side on which the studio flash has been positioned with the Frankfort plane parallel to the horizontal.

Take photographs with the patient both smiling and not smiling in both the frontal and profile views (Figs 5 and 6).

Choose the landscape or portrait format, depending on what the ultimate use of the photographs (Figs 7 and 8). I generally prefer the portrait format, which allows a photograph of the entire head with no "empty" spaces. It is important to take into account whether the photographs will be included in a publication, because a particular book or journal may have a preferred format.

It is highly recommended that all photographs of a patient be taken at the same magnification ratio, to ensure that photographs taken on different dates

Figure 1. Facial distortion (spherized) resulting from use of a short (50-mm) focal lens.

will be comparable. If different magnification ratios are used, this information must be recorded in the clinical record for future reference.

The ideal photograph is taken with the subject positioned so that the face is tightly cropped, leaving about 1 inch of space on all sides if possible. The amount of space will vary according to the patient's physiognomy, however; for example, photographs of long faces will have more space on either side.

For some dental disciplines, including the patient's ears in the image may be important. In orthodontics, for example, pulling back the patient's hair to show the ears is a must because of the need to image the Frankfort plane. The ears (porion, the superior aspect of the external auditory meatus) and the eyes (orbitale, the inferior point of the orbital rim) define the Frankfort horizontal

Figure 3. This patient's hair is lost in the black background. A gray or other light-colored background should be used for subjects with dark hair.

plane. For evaluation of the profile, position the Frankfort plane parallel to the floor.

When a studio flash is not available and an intraoral flash must be used, some limitations on quality should be expected. The intraoral flash does not have the power to evenly illuminate the subject, necessitating the use of large apertures and result-
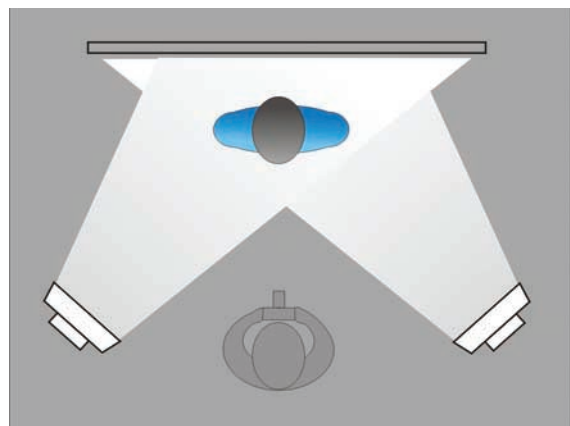

Figure 2. The same subject as in Figure 1 photographed with a 105-mm lens.

Figure 4. Diagram of a studio set up for photographing the face.

Figure 5. Full-face photograph.

Figure 7. A facial photograph in landscape format. Compare with Figures 5 and 8, particularly with regard to the unused space on both sides of the face.

Figure 8. An acceptable photograph of front view in landscape format. Using a tighter crop takes advantage of the spaces on the sides of the subject's face. Compare with Figure 7.

Figure 6. Profile photograph.

Figure 9. Placing a single flash, such as is obtained with an intraoral unit, close to the camera may result in an undesirable "red eye" effect.

ing in a shallow depth of field. If a nonblack background is used, remove the flash from the lens and hold it above the camera to eliminate "red eye" as well as undesirable shadows over the background (Fig 9).

On some occasions, a photograph emphasizing esthetic features of the patient's face may be desired. To obtain such an image, ask the patient to rotate his or her head until 1 ear is not visible. It is advisable to experiment with different apertures until a consistently reproducible image is obtained.