

LETTERS

More on Adjusting the Slit-lamp Oculars

To the Editor:

I read with great interest the article, "Adjusting the Slit-lamp Oculars: An Unnecessary Burden or a Must," by E. Z. Blumenthal (*Surv Ophthalmol* 40(3): 225-228, 1995). I agree with him on the importance of the adjustment, especially for long hours of work. I would like to add the following comments:

1) The use of the focused slit for the adjustment of the oculars becomes much easier when you use the higher magnification of the slit-lamp (e.g. 40X in the slit-lamps with a Galilean objective system). With this magnification even very small deviations from confocality can be easily detected. This is because in this high magnification the depth of field is very small and even a small eccentricity of the focused slit is much more apparent.

2) Accommodation when viewing through the slit-lamp oculars can be elicited also by exophoria. This can not be compensated for by increasing the distance between the oculars (pupillary distance) since this does not change the direction of the optic axis of the two systems, right and left, of the stereomicroscope, and thus does not affect the need for convergence, while it will adversely affect the field of view and binocularity. My personal experience is that, being moderately exophoric, I find myself many times suppressing the picture of one of my eyes, losing stereopsis, especially in the final stages of a long examination, or when I am tired.

3) In the case of a photo-slit-lamp, focusing on the film plane of the camera is of primary importance. In this case it is imperative to use the focusing rod. I have found that you can get additional sharpness of the pictures, if after this first focusing you look through the view-finder of the camera and focus on a piece of printed paper with the joy-stick of the slit-lamp (wearing your correction for distance, if any), then lock the slit-lamp in place and looking through the oculars adjust the rings. In the case of a video-slit-lamp, the focusing of the video camera, when first installed, is of utmost importance. Once properly installed, the video camera should not be touched again and any adjustment of the oculars of the slit-lamp by any individual examiner should be done by focusing the image of a printed paper on the screen using high magnification and then

adjusting the oculars of the slit-lamp. The same method is used when a video is attached to the operating microscope. This meticulous procedure results in a sharp picture even when using high magnifications either in the slit-lamp or the operating microscope.

4) In the case of the slit-lamp-mounted Argon laser, where confocality of the laser beam and the slit-lamp is imperative, especially for laser trabeculoplasty and close macular work, you should first focus the laser spot using high magnification (at least 16X) and then turn the rings of the oculars, until you have the sharpest possible view of the fundus or trabeculum. This often brings also the laser spot into the illuminated area of the fundus.

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Author's response:

I would like to thank Dr. Serpetopoulos for his enlightening comments on my paper. I wish to add the following remarks:

1) In the case of the slit-lamp-mounted Argon laser, experimenting with different ocular settings has taught me that although the laser may be pre-set to any specific spot size, the actual spot size obtained is directly related to the ocular setting. Thus, in the setting of Argon laser photocoagulation, a correct setting of the oculars is not just a question of comfort and clarity. This phenomenon is apparently related to the conus-shaped laser beam intersected by the retina at various planes. Since the ocular setting directly influences the antero-posterior location of the slit-lamp joy-stick, different spot sizes can be obtained. This is especially significant in the case of small spot sizes (such as when performing laser trabeculoplasty).

2) Slit-lamp mounted lasers are calibrated to give the correct spot size at the focusing-rod plane (if this is not the case, technical support is recommended). Therefore, I personally favor the routine use of a focusing rod for adjusting the oculars rather than relying on the appearance or sharpness of the aiming beam spot.

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