Report of "Glistenings" Does Not Correspond With the Definition of Glistenings

We read with interest the report by Kang et al.[1] claiming initial documentation of glistening formation in a prehydrated hydrophobic acrylic intraocular lens (IOL) (enVista MX60; Bausch & Lomb, Rochester, NY) following implantation in a patient with poorly controlled diabetes. The authors described their findings as follows: "The pattern appeared different from the one the authors had seen before; diffuse whitish grade 1 glistenings with small, round clear zones in a regular manner were observed on the entire optic." Close examination of the image provided in the article demonstrates scattered, irregular, hazy patches approximately 0.1 to 0.2 mm in diameter on the anterior surface of the optic. The "clear zones" appear to be the shadows of these patches cast on the posterior surface of the optic by slit beam illumination.

The observations reported by Kang et al. do not correspond to any previously published description of glistenings, which are fluid-filled microvacuoles with sizes usually ranging from 1 to 20 µm that form within the IOL optic when the IOL is in an aqueous environment.[2] Glistenings are usually distributed throughout the entire IOL optic[3] and appear as "bright spots"[4]; however, Kang et al. describe "diffuse whitish" areas "on the surface of the optic." Furthermore, the findings reported by Kang et al. do not fit the description of "surface scattering"[5] usually related to the presence of "sub surface nano-glistenings,"[6] which presents as a uniform whitening of the anterior optic when light is directed at the IOL at an angle of incidence of 30° or greater during slit-lamp examination.

Authors have previously reported an association of glistenings with diabetes, thought to be related to compromise of the blood–aqueous barrier. Diabetes may also be associated with increased and prolonged cell and flare after cataract surgery. The patches in the image provided by Kang et al. may represent either proteinaceous or cellular debris resulting from a similar process. Given the relatively well-preserved visual function, it is unlikely that IOL explantation will allow a clinicopathologic correlation.

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Reply

We thank Drs. Packer and Werner for their interest in our article.[1] We are aware that the intraocular lens (IOL) we used in our case (enVista MX60; Bausch & Lomb, Rochester, NY) had not been reported to develop glistenings. The enVista MX60 was additionally prehydrated to equilibrate the water content, which has been known to prevent glistenings, a relatively common side effect of some hydrophobic IOLs.

As we described in our case report, we observed the glistenings 6 months after the IOL insertion. Initially, our differential diagnosis was an IOL opacification or early phase of posterior capsular opacity rather than glistenings. However, after we examined the patient's eye by zooming in with a slit-lamp biomicroscopy after pupil dilation, we excluded those possibilities by confirming the pattern and its location. We do not think the "clear zones" are the shadows of the patches on the posterior surface of the optic because we observed that the optic quality was preserved throughout those parts of the optic. We confirmed that the phenomenon was evident throughout the entire IOL optic by slit beam illumination, not sparing any part of the IOL.

As we described in the article, the pattern is not typical for glistening. However, in terms of existing terminology and differential diagnosis, we have reached the conclusion that it was an "atypical form of IOL glistening" and reported it to the journal. It is less likely "cellular debris" because its distribution was uniform but the color was not entirely white. Although exact mechanisms are unknown, they are thought to be a result of the condensation of the accumulation of water

within the matrix of IOLs. We speculated that the patient had a poorly controlled diabetic condition and the blood–aqueous barrier had been broken for a long time before cataract surgery. Poor glycemic control of this patient could result in water absorption into the IOL optic, which may lead to phase separation in the IOL material and this unusual glistening pattern.[2]

It was recently suggested that there is a need to classify and diagnose IOL glistenings more objectively with Scheimpflug tomography or other equipment.[3] However, only a few options are widely available in current clinical settings: slit-lamp examination and the subjective grading system guided a few standard photographs. In our patient, there was no significant reduction in visual acuity related to IOL glistenings and the patient did not have subjective symptoms such as glare. We agree that the glistening that we observed may not be clinically significant because the patient did not complain about significant symptoms. However, it would be wise for physicians to consider glistening after enVista MX60 insertion, especially when the patient has risk factors.

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