Comment on: Intraocular pressure and anetrior segment anatomy after phacoemulsification surgery

Sir,

We read the article, ''The effect of phacoemulsification surgery on intraocular pressure and anterior segment anatomy of the patients with cataract and ocular hypertension.'' by Cetinkaya *et al*. with a great interest.[1] The authors aimed to evaluate the effect of phacoemulsification surgery on intraocular pressure (IOP), anterior chamber depth (ACD), iridocorneal angle (ICA), and central corneal thickness (CCT) of the patients with cataract and ocular hypertension. They concluded that phacoemulsification surgery decreases IOP and increases ACD and ICA in the short-term, but in the long-term, it does not cause any significant changes. We congratulate the authors for their lightening study and would like to make some contributions and criticism about IOP, ICA, and CCT measurement methods and times of the measurements in the study.

We know that CCT value is very important for the exact evaluation of many ophthalmologic diseases such as glaucoma, keratoconus, corneal dystrophy, and kerato-refractive surgery.[2-4] Ultrasound pachymetry (USP) is the most frequently used clinical technique and the gold standard of measuring CCT. However, placement of the probe on the corneal center is important and the perpendicularity of the probe in relation to the cornea is often difficult to ascertain. This is subjective and may cause operator-dependent errors due to off-center placement.[3] Usually, topical anesthesia is instilled before USP examination, and this could also induce bias. It is reported that topical anesthesia needed for USP may cause the cornea to swell and may give variations in CCT from −10 μm to +30 μm.[4] The results of the iridocorneal angle evaluation using Goldmann 3-mirror lens is also affected by examiner. We think that if measurements were performed by different examiners, this might be affected the results. The authors did not inform if all measurements were performed by the same examiner or not during 2 years study period. In addition, using the mean value of multiple USP measurements in a period for one person could reduce the risk of error.

Another important factor which might be affected the results is a diurnal variation of the CCT and IOP. It is reported that there cornea swells during sleep upon eye opening and deswells about 2 h after eye opening. It is known that the mean circadian fluctuations of CCT are about 15 μm, and the circadian fluctuations may affect the IOP up to about 11 mmhg.[5] The authors also did not give any information about the time of the day during measurements. We think that if measurement were performed in different times of the day, this might be affected the results.

We congratulate the authors and thanks for their understanding.

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Conflicts of interest

There are no conflicts of interest.

Yakup Aksoy, Taner Kar[1], Abdullah Kaya[2]

Department of Ophthalmology, Girne Military Hospital, Kyrenia, Kyrenia, Cyprus, [1]Department of Ophthalmology, Gulhane Military Medical Academy, Haydarpasa Training Hospital, Uskudar, [2]Department of Ophthalmology, Anıttepe Military Dispensary, Ankara, Turkey

Correspondence to: Dr. Yakup Aksoy, Girne Military Hospital, Girne, Cyprus. E-mail: dryakupaksoy@gmail.com

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