



Letter of response to “Comment re: Comparison of the horizontal diameter to a modeled area of traction in eyes with vitreomacular traction: is the diameter close enough to the truth?”

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Dear colleagues,

Thank you for your comments on the subject of a more accurate measurement technique for vitreomacular traction (VMT). We fundamentally agree with your previously reported findings [1] that the vitreomacular angle of adhesion appears to be related to the strength of traction exerted by the vitreous, and therefore, seems to be an important factor in the prediction of VMT resolution [2].

However, our study focused on the description of the true VMT area in comparison to the commonly used predicted area based on the horizontal diameter of the VMT attachment site. To clarify, in 43.2% of our study eyes, the correct actual area of VMT differed more than 30% from the predicted area based on measuring the horizontal diameter in OCT scans. This difference was caused by a deviation from a circular shape. The area of vitreomacular attachment showed variable shapes in this study. Some eyes were documented with ellipsoid areas of VMT, others were found with more complex non-ellipsoid areas of VMT adhesion.

Thus, predicting a circular shape of the VMT area by using horizontal diameter measurements alone appears not accurately enough to illustrate the correct vitreomacular interface interaction between vitreous and

retinal surface. Our findings emphasize the need for more accurate measurement techniques either by applying new models or by using other imaging modalities, such as enface OCT.

Importantly, we believe that not only the correct area and shape of VMT but also numerous other factors should be taken into account when developing new models for VMT description and resolution prediction, such as angle of vitreomacular adhesion, presence of vitreopapillary adhesion, vector of force generation, and presence and amount of epiretinal membranes. Vitreomacular interface interactions are much more complex than currently described by our limited mathematical calculations.

In summary, many thanks to Theodoropoulou and colleagues for contributing to this discussion and pointing to the angle of VMT adhesion as important factor to determine strength of vitreous traction in eyes with VMT. Understanding the three-dimensional structure of the vitreous and the dynamic interaction between vitreous and retinal layers seem to play a key role in finding new models and measurement techniques for decision-making in VMT patients.

References

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