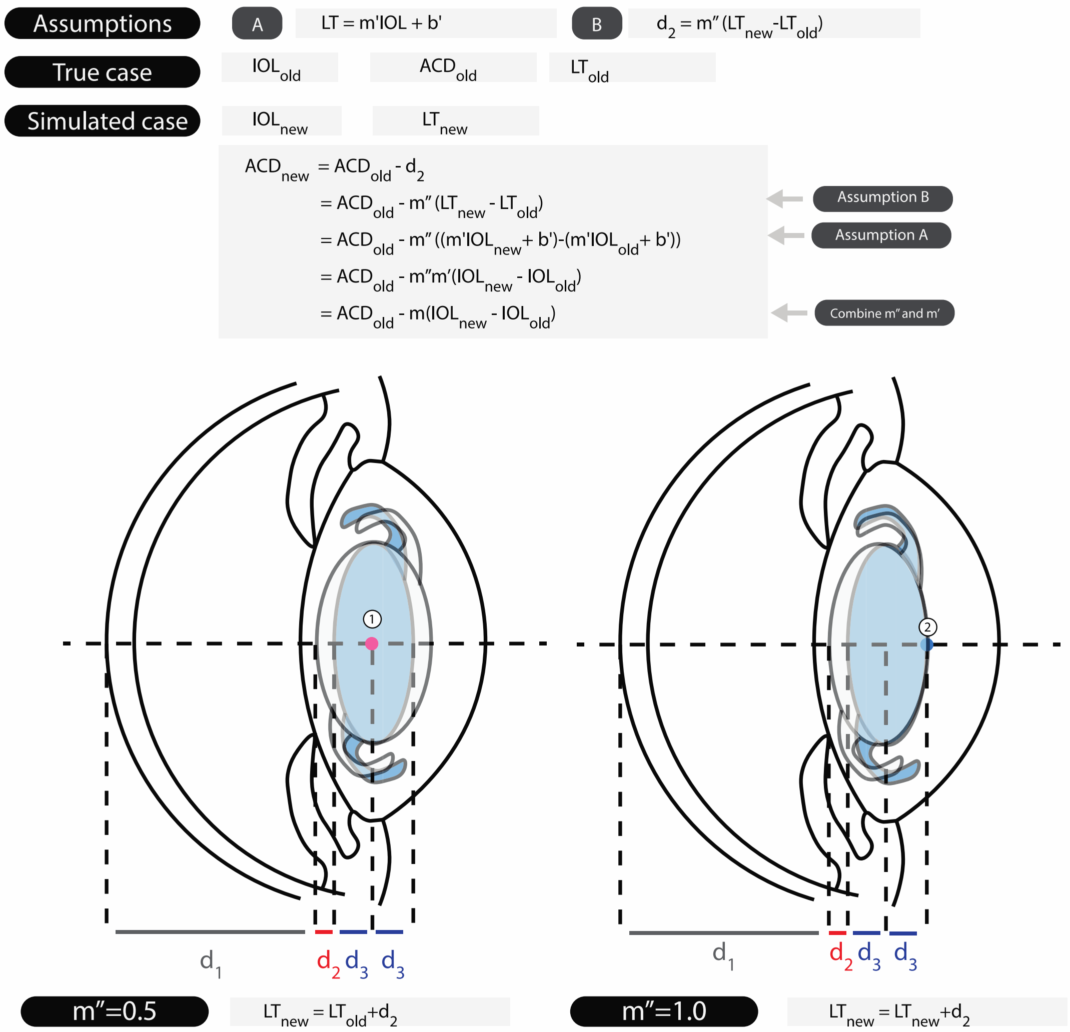

Figure S1 Schematic of the IOL augmentation method. IOL = the IOL power. LT = the thickness of the intraocular lens. ACD = the postoperative anterior chamber depth. The upper half of the figure elaborates the equation's derivation $ACD_{new} = ACD_{old} - m(IOL_{new} - IOL_{old})$ which we used to augment the IOL power and the postoperative ACD. During the augmentation, simulated cases were created based on real cases in the dataset. The IOL powers for the simulated cases were randomly selected. The equation assumes (1) a simple linear relationship between the IOL power and the thickness of the intraocular lens: $LT_{new} - LT_{old} = m'(IOL_{new} - IOL_{old})$ (LT_{new} and LT_{old} are the thickness of the IOL), and (2) an imaginary anchor point on the visual axis within the IOL that has a fixed location independent of the IOL power. The first assumption bridges the IOL power and the thickness of the IOL. The second assumption is necessary because it provides way to map the change in intraocular lens thickness to the change in the postoperative ACD. The diagrams in the lower half of the figure depict two physiologically plausible assumptions about the location of the IOL: (1) when the anchor point is at $0.5 * LT_{IOL}$ (LT_{IOL} is the thickness of the IOL) and (2) when the anchor point is at $1.0 * LT_{IOL}$. The blue lens stands for the real implanted lens, and the white lens stands for the imaginary lens in a simulated case. Instead of guessing a value for the location of the anchor point, the anchor point location was represented by $m'' * LT_{IOL}$ ($m'' \in [0,1]$) and m'' was combined with m' into one single variable: $m = m'm''$. For a given constant m, we could calculate the corresponding postoperative ACD and evaluate the performance of our method using the augmented data. The m that gave the best performance in cross-validation was chosen.