**Figure S1** The structure of GAG adopted in the GAR2U-Net. GAG, global attention gate; GAR2U-Net, recurrent residual convolutional neural network with global attention gate based on U-net.
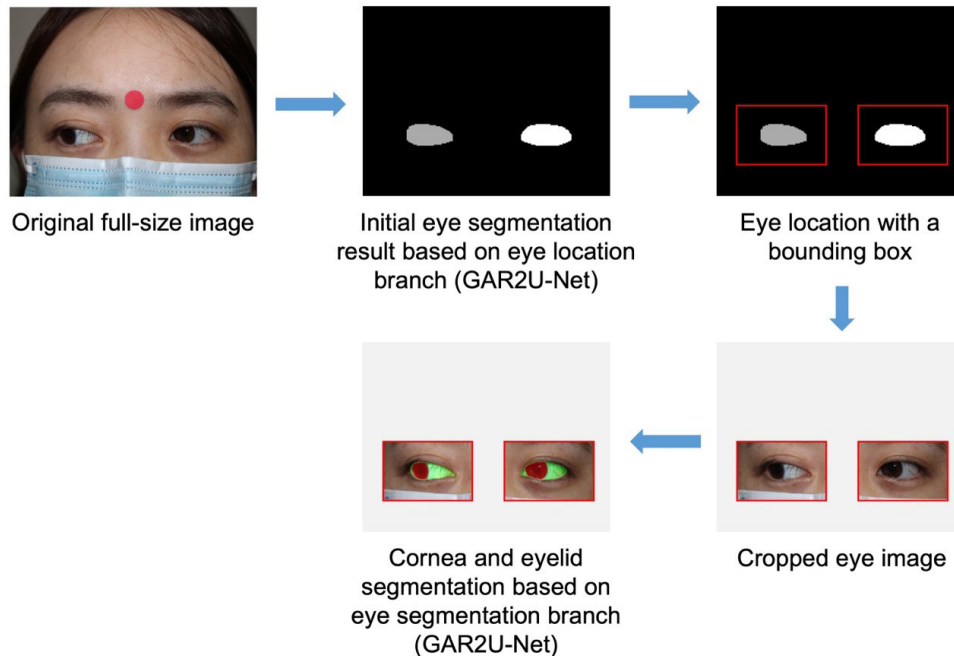


**Figure S2** The workflow of eye location and eye segmentation based on GAR2U-Net. This image is published with the patient's consent. GAR2U-Net, recurrent residual convolutional neural network with global attention gate based on U-net.
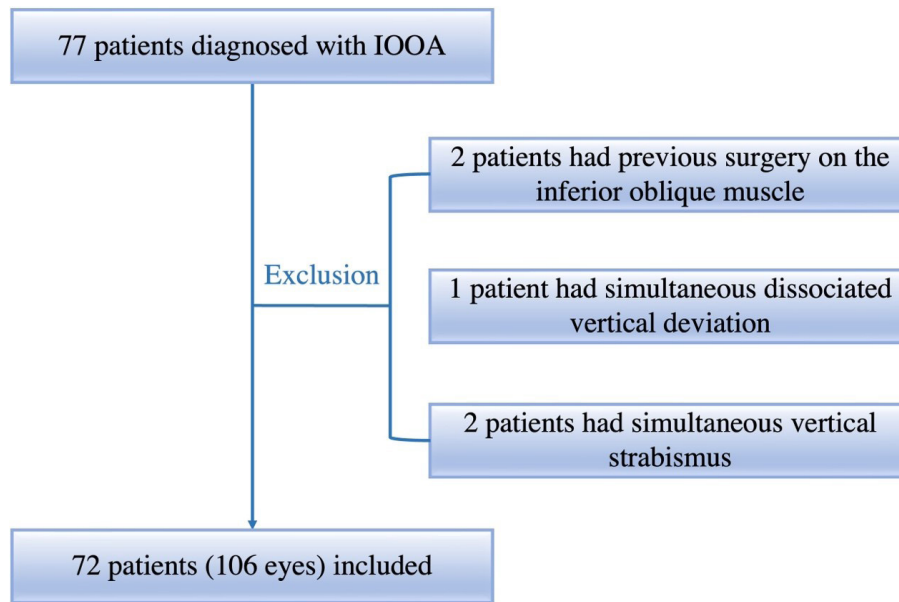
**Figure S3** The flow of participants through this study. IOOA, inferior oblique overaction.

**Table S1** The characteristics of the patients included in this study

| Characteristics | Value |
|---|---|
| Age (years) | 17.6±12.7 |
| Gender | |
| Male | 24 |
| Female | 48 |
| Clinical grading of IOOA eyes | |
| +1 | 69 |
| +2 | 24 |
| +3 | 10 |
| +4 | 3 |

Data are present as number or mean ± SD. IOOA, inferior oblique overaction; SD, standard deviation.