

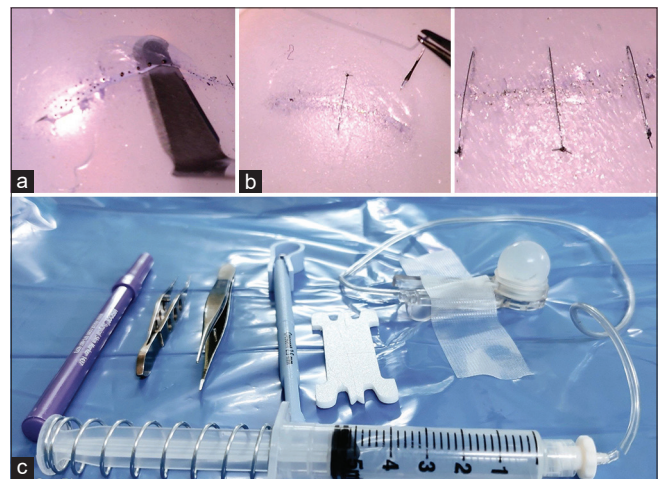
## A novel eyeball simulator for training postgraduate students during pandemic times

Dear Editor,

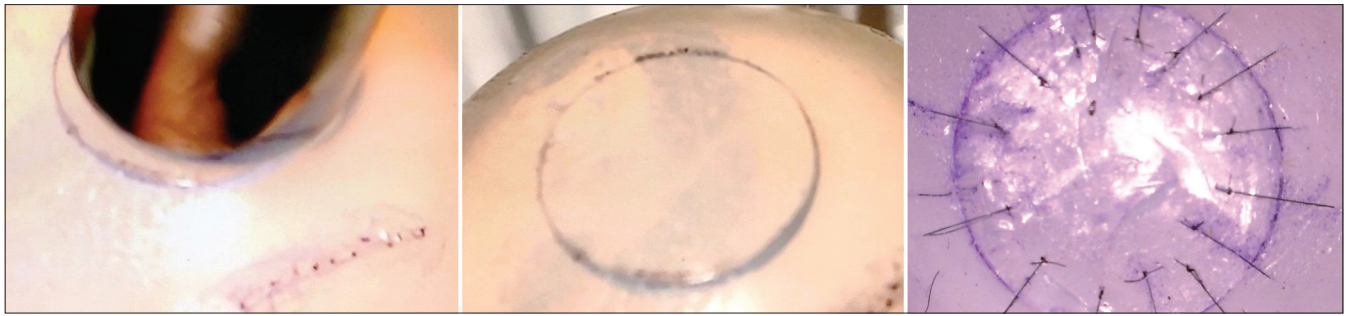
During the COVID-19 pandemic era, the eye banks faced significant turmoil all over India with a reduced number of corneal retrievals for corneal transplants.<sup>[1]</sup> Unfortunately, the postgraduate trainees and those doing fellowship programs in cataract and cornea surgeries were more affected due to a shortage of training eyeballs.<sup>[2-5]</sup> Mishra *et al.*<sup>[3]</sup> had conducted a survey for residents and fellows and assessed the impact of COVID-19 on their training programs and found that their learning and surgical skills were affected adversely. Experts conducted online continuing medical education, but the methods to improve surgical skills could not be followed perpetually due to inadequate eyeball in the wet labs.<sup>[2]</sup>

To combat this issue, we propose a novel idea of using “Aurosphere” —an Aurolab product used for enucleation and evisceration procedures as a prosthesis and alternative for surgical wet lab practice. It is spherical, made of polysiloxane material, a human-made elastomer with elastic properties. This “Aurosphere” was used as an eyeball simulator for wet lab Small incision cataract surgery (SICS) tunnel making and suturing practice for novice surgeons. Since there is a large surface area, the sphere can be turned around, and the tunnel practicing can be done all around the sphere repeatedly [Fig. 1a]. The same tunnel can be sutured using the 10-0 nylon suture material [Fig. 1b] easily with a similar impression of the sclera. For practicing keratoplasty sutures, trephines can be used to punch the sphere easily [Fig. 2], and

suturing can be practiced by fixing the sphere to the reverse side of the unsterile Femto Lasik suction rings by creating a vacuum with the inbuilt suction syringe of the Femto unit [Fig. 1c]. The SICS tunnel practice can be done ably in the Slit lamp by fixing it with a nondominant hand and using an unsterile crescent knife, and thereby tunneling can be practiced with the dominant hand. In addition, it avoids the putrid smell of the Goat’s eye, used for training. We know that there is no substitute for learning and performing surgical procedures in real life.<sup>[4]</sup> Still, our novel discovery will permit the uninterrupted practice of the most limiting step of manual SICS procedure, tunnel making, and the suturing for keratoplasty during crises.



**Figure 1:** (a) SICS tunnel being practiced with a crescent knife. (b) Suture practice on the same SICS tunnel. (c) Fixation of Aurosphere to the Femto Unit



**Figure 2:** Trephination and keratoplasty suturing practice on the Aurosphere

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### Conflicts of interest

There are no conflicts of interest.

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