

## Making the most of limited resources in wet-lab training during COVID-19

Dear Editor,

Wet labs and virtual simulators are often used to augment surgical training. Being more economical, wet labs are more popular, especially having gained importance during the Coronavirus-19 pandemic.<sup>[1,2]</sup> Here, we are sharing some techniques that have worked for us to maximally use a single goat's eye.

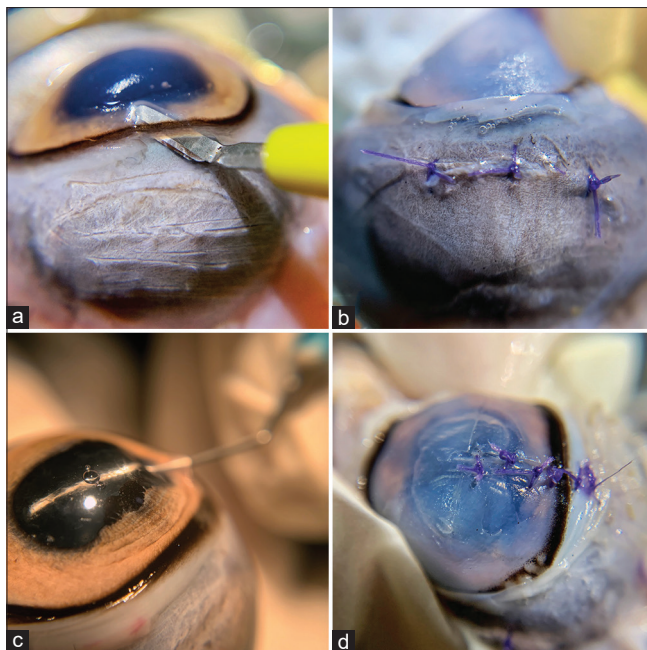
### With the goat's eye remaining taut, steps one can practice without entering the anterior chamber

1. Peritomy, extending from the limbus up to the equator choosing the broader radius of the curvature of the goat's eye.
2. Scleral scratch incisions—straight, frown, etc. Multiple scratch incisions can be placed successively posterior to one another over the exposed sclera [Fig. 1a].
3. Sclero-corneal tunnel, which can be practiced at the smaller radius of curvature on both sides. If the tunnel gives way, one may practice scleral suturing [Fig. 1b].
4. Side-port entry at one of the smaller radii of curvature. More than one side-port entry may be attempted and then sealed by simple interrupted sutures.

### Steps upon entering the anterior chamber

If the cornea becomes hazy and precludes visualization, the corneal epithelium can be debrided locally.

1. Entry through the sclera-corneal tunnel.
2. Passing instruments through the side-port and main-port—injection of trypan blue dye and forming of



**Figure 1:** Single microscope with goat's eye set-up showing (a) successive scratch incisions placed posterior to a sclero-corneal tunnel (marked with the crescent knife), (b) scleral suturing practiced over a sclero-corneal tunnel, (c) capsulorhexis using a bent 23-gauge needle, (d) sclero-corneal suturing on a ragged incision

the anterior chamber with ocular visco-surgical devices.

3. An anterior capsular opening made with the longer 23- or 24-gauge needle to accommodate for the larger size of the goat's eyeball<sup>[3]</sup> [Fig. 1c].
4. Hydrodissection, an effort at nuclear rotation, and delivery if the conditions remain favorable.
5. Irrigation and aspiration with a Simcoe cannula.
6. Intraocular lens implantation.
7. A ragged incision on the sclera and/or cornea may be made and sutured. With the collapsing globe, this may simulate a traumatic globe rupture [Fig. 1d].

The feel of an enucleated eye is different from live surgeries. An important cause for frustration when practicing in the enucleated eye is that the eye may move during surgery and frequently collapses during practice. The Spring-action Apparatus for Fixation of Eyeball (SAFE) helps in keeping the eye stable within the cylinder and also increasing the intraocular pressure so that the globe does not collapse.<sup>[4]</sup> This would be a worthwhile addition to the wet labs.

The practice of surgical steps need not be restricted to patients or wet lab. Ambidexterity can be encouraged by using a non-dominant hand in some everyday activities. Further, the commonly available household items can provide reasonably good simulation for certain surgical steps as demonstrated by Akkara *et al.*<sup>[5]</sup>

In the wet lab, residents of different years can coordinate to practice steps most relevant to them, permitting the eye to be used by more than one resident. Though, not a replacement for hands-on surgical training on patients, this provides a reasonable means to practice skills when surgical opportunities are scarce during this pandemic.

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### Conflicts of interest

There are no conflicts of interest.

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