Comment on: Fluid-jet technique to polish the posterior capsule for phacoemulsification surgeries: efficacy and safety evaluation

We read with great interest the study by Liu et al.1 The authors have presented a well-structured study to demonstrate the efficacy and safety of the fluid-jet technique to polish the posterior capsule for phacoemulsification surgeries. Our interest was piqued because the technique of polishing the posterior capsule with jets of a balanced salt solution was first independently presented in consecutive lectures at the September 1999 Congress of the ESCRS, in Vienna, Austria, by Steve Arshinoff (author) and, then, in the immediately subsequent presentation, by Thomas Neuhann (author). Arshinoff presented this idea first at the April 1999 ASCRS Symposium on Cataract, IOL, and Refractive Surgery in Seattle, Washington, in the presentation "Extending the idea behind the viscoelastic soft-shell technique," and it was later published, but both of us had devised the technique independently and used it for every case since the late 1980s.2

We made the following points: (1) The cannula should have a polished blunt tip to prevent snagging the posterior capsule. (2) Injection should be uninterrupted when the cannula is in the eye to prevent contacting the posterior capsule, thereby exposing the capsule only to the fluid jet. (3) The method is enhanced if the hockey stick shape of the injection cannula is used to advantage to depress the posterior lip of the incision, causing it to leak as injection is performed, so that the posterior capsule domes forward, thereby causing the injection jet to induce an S curve in the capsule, with the indentation of the S facing the injection stream, facilitating removal of the residual lens fibers. (4) The balanced salt solution–jet technique can also be very helpful to wash out the capsular fornices to remove any residual cortical fibers, which are, otherwise, often unseen, especially if the pupil has constricted during the procedure.

We have each performed this technique in more than 30 000 consecutive cases since those presentations. We are convinced of its efficacy in reducing posterior capsular opacification, and Arshinoff has, therefore, taught the technique in ophthalmic vicosurgical device courses given at ASCRS, ESCRS, AAO, and many other meetings globally for almost 30 years. We therefore concur with the authors’ findings of reduction of posterior capsule opacification demonstrated in the article and can confirm that that reduction lasts for many more years than the 1 year the study by Liu et al. demonstrated, as we both now have more than 30 years of follow-up of some of those initial patients. Video 1 available at, http://links.lww.com/JRS/A401, made in the 1990s by Arshinoff and shown at the Congress of the ESCRS in 1999, and at many other meetings, shows the original technique.

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REFERENCES

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Comment on: Impact of reduced elective ophthalmic surgical volume on U.S. hospitals during the early coronavirus disease 2019 pandemic

We read with interest the article by Fliotsos et al.1 They outlined that the COVID-19–related shutdown of elective ophthalmic surgeries affected negatively on hospital income and training opportunities in the United States. As cataract surgery represents the most common ophthalmic surgical procedure and is the core of surgical ophthalmology training, we aimed to assess the impact of theater lockdown on the performance of cataract surgeons of different grade. To this end, we audited cataract operations performed during the first 4 months after theater lockdown in 2020 (May to August 2020, post-lockdown group) to those of the corresponding period in 2019 (May to August 2019, pre-lockdown group) in 2 tertiary ophthalmology centers in the United Kingdom, Royal Liverpool and Broadgreen University Hospitals NHS Trust, Liverpool, and Royal Victoria Infirmary, Newcastle upon Tyne. The audit was approved by the institutional review board of each center and conformed to the tenets of the Declaration of Helsinki.

We compared the 2 groups regarding intraoperative complication rate, particularly posterior capsular rupture (PCR), and baseline clinical characteristics and postoperative corrected distance visual acuity (CDVA). The statistical analyses were performed using STATATA 14.0 (Stata Corp), and a P value of less than 0.05 was considered statistically significant. Preoperative and postoperative CDVA were compared by matched-pairs Wilcoxon signed-rank test and the complication rates by χ² test or Fisher exact test in cases of small numbers.

A total of 3649 and 1732 cataract surgeries were performed in the pre-lockdown and post-lockdown groups, respectively. In the latter, a significantly smaller proportion of surgeries were performed by trainees (1563/3649 vs 642/1732, P < .01). The baseline findings, visual outcomes, and intraoperative complications of the 2 groups are summarized in Table 1.
Despite a similar preoperative CDVA, the postoperative CDVA was significantly worse in the post-lockdown group ($P < .01$). No statistically significant difference in PCR and PCR with vitreous loss rate was found between the 2 groups; however, the analysis to trainees only showed a higher rate of both and a significantly reduced postoperative CDVA in the post-lockdown group compared with the pre-lockdown group (Table 1), demonstrating, for the first time to our knowledge, an objective effect of pandemic on training. Of interest, this seems to confirm the results of a recent survey investigating the effect of the first lockdown on training, in which approximately half of 504 ophthalmology trainees declared to experience that, after the lockdown, they were no longer able to perform cataract surgery routinely.\(^2\)

Theater lockdown may compromise trainee surgical performance, resulting in an increase of intraoperative complications. These results highlight the need to implement further strategies to preserve the effectiveness and continuity of surgical training, such as a more intensive use of simulation tools, particularly before the re-introduction to surgery, or the enlargement of the training network through the involvement of more centers to increase the opportunities for trainees to attend surgical sessions. Moreover, trainers may need to supervise trainees when they restart operating after extended periods of inactivity.

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**Table 1. Baseline Characteristics, Visual Outcomes, and Complication Rate in Eyes That Had Cataract Surgery.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-lockdown group(^a)</th>
<th>Post-lockdown group(^b)</th>
<th>$P$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract surgery, n</td>
<td>3.649</td>
<td>1.732</td>
<td></td>
</tr>
<tr>
<td>Male sex, %</td>
<td>43</td>
<td>45</td>
<td>.17</td>
</tr>
<tr>
<td>Age (y), mean ± SD</td>
<td>75.2 ± 10.1</td>
<td>74.3 ± 10.4</td>
<td>.003</td>
</tr>
<tr>
<td>Diabetes, %</td>
<td>20.70</td>
<td>20.90</td>
<td>.87</td>
</tr>
<tr>
<td>Surgeon grade (trainee/consultant), %</td>
<td>43/57</td>
<td>37/63</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Preop VA, logMar</td>
<td>0.5 ± 0.5</td>
<td>0.62 ± 0.62</td>
<td>.7</td>
</tr>
<tr>
<td>Trainees only(^c)</td>
<td>0.52 ± 0.45</td>
<td>0.53 ± 0.55</td>
<td>.016</td>
</tr>
<tr>
<td>Ocular copathology, %</td>
<td>40.40</td>
<td>46.00</td>
<td>.007</td>
</tr>
<tr>
<td>Follow-up time (d)</td>
<td>42.5 ± 18</td>
<td>45.6 ± 20</td>
<td>.008</td>
</tr>
<tr>
<td>Postop CDVA, logMar</td>
<td>0.14 ± 0.27</td>
<td>0.20 ± 0.37</td>
<td>&lt;.01(^*)</td>
</tr>
<tr>
<td>Trainees only(^c)</td>
<td>0.13 ± 0.25</td>
<td>0.21 ± 0.36</td>
<td>&lt;.01(^*)</td>
</tr>
<tr>
<td>Corneal problems</td>
<td>0.52</td>
<td>0.52</td>
<td>.99</td>
</tr>
<tr>
<td>Iris problems</td>
<td>0.44</td>
<td>0.23</td>
<td>.24</td>
</tr>
<tr>
<td>Zonular dialysis</td>
<td>0.6</td>
<td>0.52</td>
<td>.71</td>
</tr>
<tr>
<td>PCR</td>
<td>1.23</td>
<td>1.67</td>
<td>.19</td>
</tr>
<tr>
<td>Trainees only(^c)</td>
<td>1.47</td>
<td>3.12</td>
<td>.02(^*)</td>
</tr>
<tr>
<td>PCR/VL</td>
<td>0.71</td>
<td>1.21</td>
<td>.06</td>
</tr>
<tr>
<td>Trainees only(^c)</td>
<td>1.02</td>
<td>2.34</td>
<td>.03(^*)</td>
</tr>
</tbody>
</table>

PCR = posterior capsular rupture; postop = postoperative; preop = preoperative; VA = visual acuity; VL = vitreous loss

\(^a\)Statistically significant

\(^b\)May to August 2019

\(^c\)May to August 2020

\(^*\)Fisher exact test

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**REFERENCES**


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