Randomized Clinical Trial of Topical Versus Retrobulbar Anesthesia for Phacoemulsification: Comparison of Patient Satisfaction

Waqar-ul-Huda, M.S. Fehmi, Sharjeel Sultan, Uzma Fasih, Attiya Rehman, Arshad Shaikh

Purpose: Current anesthetic options for phacoemulsification typically include injection techniques, such as retrobulbar block, peribulbar block, sub-Tenon injection and topical anesthesia. Consensus does not yet exist on whether regional or topical anesthesia is the superior option, although topical anesthesia is being more commonly used.1

Material and Methods: This was a randomized clinical trial done at eye Operation theatre at Abbasi Shaheed Hospital Karachi. In group A topical anesthesia (TA), patients received a minimum total of 5 doses of 2% topical proparacaine. For performing retrobulbar (RBA) block in group B, patients received 2% lidocaine anesthetic solution 1-2 ml into the retrobulbar space. Phacoemulsification was performed using clear corneal phacoemulsification and implantation of IOL. We used a scoring system, the Iowa satisfaction with Anesthesia scale (ISAS) a self administered written questionnaire for assessment of patient satisfaction.

Results: Mean Iowa score in topical group was 2.71 while it was 2.3 in retrobulbar group. Median Iowa score in topical group was 3 while it was 2.54 in retrobulbar group. The difference in mean Iowa score was found to be statistically significant between two groups (p value < 0.05).

Conclusions: Topical anesthesia (TA) is a safe, satisfactory alternative to retrobulbar (RBA) anesthesia without causing discomfort to the patients.
MATERIAL AND METHODS

This was a randomized clinical trial done at eye operation theatre of Abbasi Shaheed Hospital Karachi. The trial was done for a period of six months having 32 patients in each group (group A topical and Group B retrobulbar). The inclusion criteria were patients with cataract presenting to the outpatient department, Aged 45-65 years, Patients of either gender, first eye operation. Mentally Handicapped patients, patients with history of raised intraocular pressure (>21mm of Hg), known case of lidocaine hypersensitivity and patient who had requested sedation for the operation were excluded.

Approval from Institutional ethical committee was taken. Written informed consent was taken from each patient after giving an information leaflet describing the study. The patients were randomly allocated to either of two groups A (topical TA) and B (retrobulbar RBA) by the principal investigator through Non probability purposive technique.

In group A (TA), patients received 2 drop (approximately 40 microlites per dose) of 2% lidocaine 3-5 times. For performing retrobulbar block in group B (RBA), 22-27 gauges, 3cm long needle was inserted at the infero lateral border of the bony orbit. Following a negative aspiration for blood, 2.5 ml of local anesthetic solution was injected and the needle was withdrawn.

Phaco was performed by a single experienced phaco surgeon who has experience of more than 10 years in phacoemulsification. He had used standardized clear corneal incision with phacoemulsification and implantation of IOL.

We used a scoring system, the Iowa satisfaction with Anesthesia scale (ISAS) a written questionnaire for patient satisfaction. For each item, patient marked the answer that best showed how well the statement described his/her feeling. Each question had a marking from -3 to +3. A totally satisfied patient had a score of + 3; a totally dissatisfied patient had score -3. The mean of their responses to the 11 statements gave a single number between -3 and +3, which was a quantitative measure of a patient’s satisfaction with their anesthesia care.

RESULTS

IOWA satisfaction score

Data distribution for Iowa score was not found to be normal. Mean Iowa score in TA group A was 2.71 while it was 2.3 in RBA group B. Median Iowa score in topical group was 3 while it was 2.54 in retrobulbar group. The difference in mean Iowa score was found to be statistically significant between two groups (p value < 0.05). This showed TA group patients were more satisfied than RBA group.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Topical (n = 32)</th>
<th>Retrobulbar (n = 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean years)</td>
<td>58</td>
<td>56</td>
</tr>
<tr>
<td>Weight (mean kg)</td>
<td>75.14</td>
<td>73.46</td>
</tr>
<tr>
<td>Gender (M:F ratio)</td>
<td>62:38</td>
<td>50:50</td>
</tr>
<tr>
<td>Hypertension n (%)</td>
<td>10 (31)</td>
<td>22 (69)</td>
</tr>
<tr>
<td>Diabetes n (%)</td>
<td>10 (31)</td>
<td>12 (37)</td>
</tr>
<tr>
<td>Smoking n (%)</td>
<td>7 (22)</td>
<td>13 (41)</td>
</tr>
</tbody>
</table>

DISCUSSION

In recent years, there has been considerable discussion in the literature about TA and RBA techniques for phacoemulsification anesthesia\(^\text{18}\). Choice of local anesthesia technique depends largely on the preferences of anesthesiologists and surgeons, but increasing attention is being paid to patient preferences, their perceptions of intraoperative pain and satisfaction\(^\text{19-20}\).

This is perhaps the first study to investigate levels of patient satisfaction after cataract surgery using a validated reliable and internally consistent assessment tool in Pakistan.
In the present study 87% of TA group and 69% of RBA were relaxed during the surgery. In other comparative study done in Iran\textsuperscript{21}, two hundred thirty five patients (83%) in the retrobulbar group and 238 (84%) in the topical group reported minimal discomfort (0 – 2) during phacoemulsification. The mean ± SD pain score in the topical was 1.13 ± 1.36, while in the retrobulbar is 1.14 ± 1.47 (P = 0.92). This showed that Patients undergoing cataract surgery with topical and retrobulbar did not vary in pain score, efficacy of anesthesia and feasibility of surgery. This suggests that cataract surgery can be performed with topical anesthesia without compromising the safety of the procedure.

There were some limitations of our study. Although we did use IOWA for patient satisfaction scoring but we did not measure any pain scale like VAS for assessment of pain intra and postoperatively. We did not follow the patient for any surgery or procedure related complications.

CONCLUSIONS

The topical anesthesia is an effective method in providing a painless surgical procedure in patients undergoing phacoemulsification. It is also safer and non invasive as compared to retrobulbar anesthesia. Also by using topical anesthesia, we can eliminate pain and fear of needle insertion for retrobulbar anesthesia. So considering all these, topical anesthesia for phacoemulsification is worthy of clinical use.

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REFERENCE

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