ABSTRACT

BACKGROUND: Wide-angle viewing systems have significantly improved intraoperative visualization of peripheral retina. The static field of view for most systems is in the range 120 to 140 degrees. Intraoperative manipulations such as ocular rotation, lens tilting, and lens decentration can further enhance peripheral viewing. From a surgical perspective it is more relevant to know the distance of an area of interest from the ora serrata, than from the optic disc. The current study evaluated the distance of the retina area that corresponded to A) the internal tip of the sclerotomy cannula and B) edge of the viewing field from the ora serrata.

METHODS: Non-comparative, clinical case series. Participants: patients undergoing pars plana vitrectomy (PPV) and endolaser photocoagulation. Exclusion criteria included patients with pupil diameter <5mm. During PPV, the retinal areas corresponding to the internal tip of the sclerotomy cannula and the edge of the viewing field were marked with endolaser photocoagulation. The ora serrata was visualized with scleral depression and the distance between the ora serrata and the laser marks were measured in “cannula diameter” units. The measurements were subsequently converted to millimeter units.

RESULTS: 35 eyes of 35 patients were included in the study. Contact lens viewing system (OVI 130) was used in 23 eyes (group1) and a non-contact viewing system (BIOM) was used in 12 eyes (group2). The cannula tip was visualized in 22 (95%) eyes in group1 and in 10 (83%) eyes in group 2. The mean distance from the edge of the viewing field to ora serrata was 1.1 mm (range 0-2.9 mm) for group 1 and 1.2 mm (range 0.4-3.3 mm) for group 2. The mean distance from the cannula tip to ora serrata was 1.4 mm (range 0.3 to 2.9 mm) for the 32 subjects in which the tip of cannula could be visualized. The 3 eyes in which the cannula tip could not be visualized also had a longer field-edge-distance.

CONCLUSION: Internal tip of a sclerotomy cannula can serve as a useful landmark indicating proximity to the ora serrata. With the current wide-angle systems it is possible to visualize the peripheral retina to the vicinity of the vitreous base without the need for scleral depression in most cases.

RESULTS

• 35 eyes of 35 patients. Contact lens viewing system (OVI 130) was used in 23 eyes (group1) and a non-contact viewing system (BIOM) was used in 12 eyes (group2).

• Pupil diameter: Mean 7.2 mm, Range 5 – 9 mm

• Lens status: Phakic 19, PCIOL 13, ACIOL 3

• Cannula tip was visualized in 22 (95%) eyes in group1, and in 10 (83%) eyes in group 2.

• Distance of edge of the viewing field from the ora serrata was 1.1 mm (range 0-2.9 mm) for group 1 and 1.2 mm (range 0.4-3.3 mm) for group 2.

• Distance of the retina area that corresponded to A) the internal tip of the cannula was visualized in 22 (95%) eyes in group1, and in 10 (83%) eyes in group 2.

• Distance of cannula tip to ora serrata was 1.4 mm (range 0.3 to 2.9 mm) for the 32 subjects in which the tip of cannula could be visualized.

• Distance of laser marks measured in “cannula diameter” units.

• Outcome measures:
  - Distance of laser marks from the ora serrata
  - Distance of edge of the viewing field from the ora serrata

METHODS

• Non-comparative, clinical case series

• Participants: patients undergoing PPV and endolaser photocoagulation

• Exclusion criteria : patients with pupil diameter <5mm

• During PPV, the retinal areas corresponding to the internal tip of the sclerotomy cannula and the edge of the viewing field were marked with endolaser photocoagulation. The ora serrata was visualized with scleral depression and the distance between the ora serrata and the laser marks were measured in “cannula diameter” units. The measurements were subsequently converted to millimeter units.

• Outcome measures:
  - Distance of cannula tip from the ora serrata
  - Distance of edge of the viewing field from the ora serrata

CONCLUSION

"During pars plana vitrectomy the internal tip of a sclerotomy cannula can serve as a useful landmark indicating proximity to the ora serrata. With the current wide-angle systems it is possible to visualize the peripheral retina to the vicinity of the vitreous base without the need for scleral depression in most cases"
BACKGROUND

- Wide-angle viewing systems have significantly improved intraoperative visualization of peripheral retina. The static field of view for most systems is in the range 120 to 140 degrees. Intraoperative manipulations such as ocular rotation, lens tilting, and lens decenteration can further enhance peripheral viewing. From a surgical perspective it is relevant to know the distance of an area of interest from the Ora Serrata. The current study evaluated the distance of the retina area that corresponded to A) the internal tip of the sclerotomy cannula and B) edge of the viewing field from the ora serrata.
METHODS

• Non-comparative, clinical case series.
• Participants: patients undergoing PPV / EL
• Exclusion: pupil diameter <5mm
• During PPV, the retina areas corresponding to the internal tip of the sclerotomy cannula and the edge of the viewing field were marked with endolaser photocoagulation. The ora serrata was visualized with scleral depression and the distance between the ora serrata and the laser marks were measured in “cannula diameter” units. The measurements were subsequently converted to millimeter units.
### RESULTS

- **Cannula Tip Visualized**
  - OVI: 22 (95%)
  - BIOM: 10 (83%)

#### Distance from Ora Serrata

<table>
<thead>
<tr>
<th>Distance from Ora Serrata</th>
<th>Cannula Tip</th>
<th>Edge of Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (mm)</td>
<td>1.4 mm</td>
<td>1.2 mm</td>
</tr>
<tr>
<td>Median (mm)</td>
<td>2.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Range (mm)</td>
<td>0.4-3.3</td>
<td>0 – 2.9</td>
</tr>
</tbody>
</table>
• Internal tip of a sclerotomy cannula can serve as a useful landmark indicating proximity to the ora serrata. With the current wide-angle systems it is possible to visualize the peripheral retina to the vicinity of the vitreous base without the need for scleral depression in most cases.