Integrated Intra-operative OCT (i²OCT) - Flattening the Learning Curve for Pediatric Ocular Surgery

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Disclosures

• Ophtec Sponsored clinical trial participant
• Honorarium for Zeiss

• Executive Director of Charity
  – WSPOS
IntraOperative OCT

**Technology**
- Hand Held OCT
- Integrated into the Scope
  - Monitor display
  - Objective display

**Purpose**
- Increase surgical ease
  - Flatten the Learning curve
- Increase surgical capacity
- Understanding alternative treatment choices
- Teaching
Location of Palisades/ Imaging Challenge

The Palisades of Vogt lie predominantly in the inferior and superior region of the limbus and are believed to be the region that houses the corneal epithelial stem cells.
http://www.stembook.org/
Mount for Handheld OCT

- Had to transition between handheld and mounted format seamlessly
- High degree of freedom required

**Limitations**
- No centering mechanism
- Some locks are difficult to move
- Adapter needs to be adjusted to accept retinal lens

U.S. Provisional Patent Application Serial No. 61/869,158
• 3 months post op
<table>
<thead>
<tr>
<th>Fatty Acids</th>
<th>Patient 1 ug/mL</th>
<th>%total Hightlow ≥ or &lt; 2 Std. Dev.</th>
<th>Patient 2 ug/mL</th>
<th>%total Hightlow ≥ or &lt; 2 Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C18:3(n-6) - Gamma Linolenic</td>
<td>2.00</td>
<td>0.122% (low end of normal)</td>
<td>5.60</td>
<td>0.541% normal</td>
</tr>
<tr>
<td>C20:3(n-6) - Dihomo-g-linolenic</td>
<td>12.00</td>
<td>0.719% Low</td>
<td>3.89</td>
<td>0.376% Low</td>
</tr>
<tr>
<td>C20:4(n-6) - Arachidonic</td>
<td>63.96</td>
<td>3.031% Low</td>
<td>1.28</td>
<td>0.124% Low</td>
</tr>
<tr>
<td>Arachidonic/ChA Ratio</td>
<td>10.25</td>
<td>High</td>
<td>7.11</td>
<td>High</td>
</tr>
<tr>
<td>Total Fatty Acids (ug/mL)</td>
<td>1669.88</td>
<td>Low</td>
<td>1034.36</td>
<td>Low</td>
</tr>
</tbody>
</table>
Amniotic Membrane Transplantation in Children with Symblepharon and Massive Pannus

• R.Goyal, S.Jones, M Espinosa, V Green, KK Nischal
• Archives of Ophthalmology
2006 Oct; 124(10): 1435-50
Take Home Message

• Ocular dominance
• Separate images by defocus
• Use foot pedal to focus /change contrast
• Move eye into mires and not mires into area of interest when you are doing fine manoeuvering