Diplopia after Cataract extraction and Secondary IOL

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• 26 years old.

• History of unilateral cataract surgery in childhood – Aphakic since then.

• UCVA 1/60, 6/6
Patient was seeking cosmetic strabismus surgery.

Did recession – resection

One month post operative he was fine, with residual small XT of about 4 prisms.
• Right eye: with aphakic correction: BCVA 6/36

• Patient underwent secondary IOL implantation
• Few days after secondary IOL implantation:

Unilateral aphakia and exotropia since childhood

⇒ Strabismus surgery → aligned

⇒ Secondary IOL

⇒ Diplopia
Examination revealed the following:

- **BCVA**: OD 6/36, OS 6/3
- No significant refractive error
- Right pseudophakia
- **Exotropia 8 prism diopters, comitant in all directions**
- Complains of horizontal crossed diplopia
What usually happens during correction of diplopia with prisms:
What usually happens during correction of diplopia with prisms:

4 ΔD
What usually happens during correction of diplopia with prisms:

6 ΔD
What usually happens during correction of diplopia with prisms:

8 ΔD
In this case, things didn’t go as usual...
In our case, correction of diplopia was unusual...
In our case, correction of diplopia was unusual...

8 ΔD
In our case, correction of diplopia was unusual...
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In our case, correction of diplopia was unusual...
Central Disruption of Fusion
Upon introduction of prisms the patient notes that the images are about to superimpose then they separate again in opposite directions

Images appear to **slide** over each other
• Diplopia is described as constantly moving, especially when prisms are added and bring it nearer to fusion point.
Condition reported to cause central disruption of fusion

- History of serious neurologic diseases
- Close head trauma
- Prolonged obstruction of visual axis due to cataract
- Long standing uncorrected aphakia
Whenever you cannot fuse binocular diplopia with prisms, two things to consider:

1. Central disruption of fusion

2. Cyclotorsion
Cylco-torsional deviation

- Patient will describe tilted image
- Fundus examination will show torsion
- Double Maddox rod is a diagnostic test
Could this have been avoided?

In patients for whom secondary IOL implantation is being contemplated, it is important to obtain a complete sensory evaluation with a contact lens in place.
• Patients with long standing unilateral cataracts should be warned of the possibility of acquired loss of fusion.

• Earliest reported case had cataract (and/or aphakia) for $2\frac{1}{2}$ years.
Treatment

• Attempts at restoring fusion tends to worsen diplopia (Surgery or Prisms)
Treatment

• Occlusion of one eye is the solution.

• Some patients learn to adapt.
Mins lens
Bangerter Foil

<table>
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<tr>
<th>ITEM</th>
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<td>1.0</td>
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<tr>
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Light Perception: None

00: None
Central Fusional Disruption

- Cannot correct diplopia with prisms.
- Second image moves and slides.
- Sometimes location of second image is difficult.
- When in doubt before IOL implantation, test using contacts.
Methods of Occlusion

- Patch
- Mins lens (can be customized)
- Bangerter foil
- Translucent tape
- Opaque IOL
Thank you