A model for delivering congenital cataract surgery in Recife, Brazil

Marcelo Ventura, MD, PhD
Altino Ventura Foundation

• Non-profit organization

• Founded in 1986

• Mission: to provide ophthalmology care for the low-income population and ophthalmology training

BOARD OF DIRECTORS

Dr. Marcelo Ventura  Dra. Liana Ventura  Dr. Ronald Cavalcanti  Dra. Elaní Cavalcanti
• Tertiary ophthalmology reference center for the Brazilian Health System in Pernambuco State

35 million people from the NE of Brazil
• Headquarter + 4 satellite clinics in the Pernambuco state (Population: 9 million people)
Revenue

- Patients do not pay for care
- Brazilian Health System pays small fee per consultation and surgery
- Donations and grants – always needed
- Volunteer work
Altino Ventura Foundation

In 27 years...

• Over 7 million patients cared for

• 220 thousand eye surgeries
We trained:

• 229 residents (certified by the Brazilian Council of Ophthalmology)

• 128 Brazilian fellows

• 28 International fellows
Nowadays - Training

• 51 residents (17/year; 3 years residency course)
• 14 fellows/year (12 Brazilian; 2 International)
• 63 ophthalmologists as faculty
• 480 employees
• 120 volunteers
Altino Ventura Foundation

Some programs

• Mobile clinical units
  Complete eye exams in the countryside and in neighborhoods of low-income population

• Mobile surgical unit
  More than 20 thousand cataract surgeries in the countryside
Some programs

• Rehabilitation Center for visual and/or multiple disabilities
  Including visual rehabilitation for congenital cataract patients

• Emergency room
  24 hours, 7 days/week
  14 thousand consultations/month
  140 emergency surgeries/month
Future

- Own headquarter
  Until now all facilities are rented
  1\textsuperscript{st} part built:
  - Rehabilitation Center: 43,000 sq ft
  - Sponsored by German institutions Lions International Foundation MD 111, CBM, BMZ, RTL

- Goal when finished \(161,400\) sq ft
  70 thousand consultations/month
  4 thousand eye surgeries/month
Altino Ventura Foundation

Congenital Cataract Department

SINCE 1994
Why is it so difficult in Brazil?

- In Brazil, more common in the low-income population, usually associated with multiple disabilities
- Multidisciplinary team, more expensive
- Surgery more difficult, more complications, long-term follow-up and visual rehabilitation needed
- Pediatric ophthalmology: less profitable
- Training surgeons, waiting list
- Early diagnosis
How are the patients identified?

- Altino Ventura Foundation: reference center for congenital cataract care
- Screening of newborn babies following high risk gestations in public maternities
- Red reflex examination of all babies in maternity (required by law)
How we assure the follow-up?

- Providing transportation, food and lodging for families that need financial help in the follow-up
- Donating glasses and postoperative medication
- Providing visual and multiple disability rehabilitation
- Reintegrate the patient in the school and the community
Congenital cataract

My routine:

- Lens opacity > 3 mm
- Surgery: 6-8 weeks of age
- Bilateral cases: 2\textsuperscript{nd} eye operated 7 – 10 days
- Primary IOL implantation
### Congenital cataract

**IOL power adjusted for age (since 1999)**

<table>
<thead>
<tr>
<th>AGE</th>
<th>IOL power undercorrection</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 3 months</td>
<td>Undercorrection 9 D</td>
</tr>
<tr>
<td>6 months</td>
<td>Undercorrection 7 D</td>
</tr>
<tr>
<td>9 months</td>
<td>Undercorrection 5 D</td>
</tr>
<tr>
<td>1 months</td>
<td>Undercorrection 4 D</td>
</tr>
<tr>
<td>1,5 months</td>
<td>Undercorrection 3 D</td>
</tr>
<tr>
<td>2 months</td>
<td>Undercorrection 2 D</td>
</tr>
<tr>
<td>3 months</td>
<td>Undercorrection 1 D</td>
</tr>
<tr>
<td>≥ 4 months</td>
<td>Emetropia</td>
</tr>
</tbody>
</table>
Congenital cataract
Congenital cataract

24h postoperative

Intracameral triamcinolone acetonide (1.2mg/0.03ml)
Surgical outcomes

Congenital cataract surgery with intracameral triamcinolone: Pre- and postoperative central corneal thickness and intraocular pressure

Marcelo Carvalho Ventura, MD,*,b Bruna Vieira Ventura, MD,*, Camila Vieira Ventura, MD,*, Liana Oliveira Ventura, MD, PhD,*,d and Walton Nosé, MD, PhD*

(J AAPOS 2012;16:441-444)

Intracameral triamcinolone did not affect IOP or CCT 2 months and 1 year after the surgery in children younger than 2 years

Outcomes of congenital cataract surgery:
Intraoperative intracameral triamcinolone injection versus postoperative oral prednisolone

Marcelo C. Ventura, MD, PhD, Bruna V. Ventura, MD, Camila V. Ventura, MD, Liana O. Ventura, MD, PhD, Tiago E. Arantes, MD, PhD, Walton Nosé, MD, PhD

J Cataract Refract Surg 2014;

Intracameral triamcinolone was equally effective as conventional oral prednisolone in modulating inflammation
### Best-corrected visual acuity (mean)

<table>
<thead>
<tr>
<th></th>
<th>Bilateral cases (11 eyes)</th>
<th>Unilateral cases (3 eyes)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preoperative</strong></td>
<td>2.09 ± 0.97 LogMAR</td>
<td>1.83 ± 1.04 LogMAR</td>
</tr>
<tr>
<td><strong>Postoperative</strong></td>
<td>0.38 ± 0.08 LogMAR</td>
<td>0.42 ± 0.13 LogMAR</td>
</tr>
<tr>
<td><strong>20/2000</strong></td>
<td>20/50</td>
<td>20/300</td>
</tr>
<tr>
<td><strong>20/50</strong></td>
<td></td>
<td>20/50</td>
</tr>
</tbody>
</table>

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**Congenital cataract surgery with intraocular lens implantation in microphthalmic eyes: visual outcomes and complications**

*Cirurgia de catarata congênita com implante de lente intraocular em olhos microftálnicos: resultados visuais e complicações*

Marcelo Carvalho Ventura$^1$, Virginia Vilar Sampao$^2$, Brunia Vieira Ventura$^1$, Laura Oliveira Ventura$^3$, Walton Nogueira$^2$

Arq Bras Oftalmol. 2013;76(4):240-8
What we have improved over the years:

- CTR implant
- Bigger primary posterior capsulotomy (4 mm)
- Thorough primary anterior vitrectomy
- IOL in-the-bag
- Injection of triamcinolone acetonide in the angle of anterior chamber
XXI Congress of Blindness Prevention and Visual Rehabilitation
September 3 to 6, 2014
Recife • Pernambuco • Brazil

THANK YOU.
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