Treatment of Retinal Detachment in ROP

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For pediatric vitrectomy you need a different kind of mindset.

Micheal Trese, 2005, Detroit

Surgery
Visual outcome

Retinal Detachment in Pediatric Age

Etiology
ROP
Other vasculopathies such as Coats disease, DEVR, DM
Inflammatory disease
Trauma
Familial Vitreoretinal diseases
Retinal Detachment in ROP

Untreated ROP
Missed laser stage on screening

Treated ROP
Progression after laser treatment
Retinal Detachment in ROP

- Untreated Threshold: 50%
- CRYO-ROP: Threshold cryo 27%
- ETROP: Threshold laser 15%
- Type 1 ROP laser 10%

Maxima Medical Center
Laser treatment of 124 patients (246 eyes)
Progression to RD in 8 eyes (3%)
LASER TREATMENT IN ROP

Laser treatment in ROP

Still first choice.

Safe, good outcome, you know what your doing, can prevent progression of traction and can be of help in cases you expect secundary retinal detachment

Retinal Detachment in ROP

Progression per type ROP in MMC

ROP Type 1 0/208 eyes
Threshold ROP 7/29 eyes (24%)
APROP 1/9 eyes (11%)
Retinal Detachment in ROP

The better the screening is, the earlier we can treat and the better the prognosis for the eye.

Don’t wait too long with laser treatment.

Laser enough

Scleral buckling does not relieve traction enough.

Scleral buckling does not relieve traction enough.

Lens sparing Vitrectomy

Lensectomy and Vitrectomy
Retinal Detachment in ROP

Scleral buckling does not relieve traction enough

Lens sparing Vitrectomy
Lensectomy and Vitrectomy

*Depends on stage and retinal folds*

VITRECTOMIE

Different gauges
20g, 23g, 25g, 27g
VITRECTOMIE

23g

VITRECTOMIE

23g

VITRECTOMIE

Main difference in Surgery

In adult retinal detachment we pursue a complete removal of vitreous

In pediatric vitrectomy we pursue relief of vitreous traction on the retina
Retinal Detachment

In adult retinal detachment we have a detached vitreous or a vitreous that can be detached.

In pediatric retinal detachment we have a attached vitreous and the vitreous is so adherend that it can’t be detached.

ROP vitrectomy

A retinal tear in adults is treatable but NOT in young children.

A retinal tear in a pediatric RD is a LOST EYE.
ROP vitrectomy
Maxima Medical Center 2006-2016

36 eyes with RD
21 eyes ROP 4
15 eyes ROP 5

ROP vitrectomy
Maxima Medical Center 2006-2016

Attached retina
17/21 (81%) eyes ROP 4
3/15 (20%) eyes ROP 5
Maxima Medical Center 2006-2016

Detached retina in 2 eyes (one ROP 4 and one ROP 5) due to extreme fibrotic reaction on Bevacicumab (avastin)
Outcome after ROP vitrectomy

Maurits

Gest Age 26 wkn
BW 1090 gr
Presentation with Threshold ODS and secudairy progression to ROP 4a
Maurits

VOD 1/50 (∼2%)
VOS 1/30 (∼3%)

Normal elementary school with low vision help
### Outcome after ROP vitrectomy

**Lisa**
- **Gest Age**: 31 wks
- **BW**: 1270 gr
- Presentation at with ROP 4b ODS

<table>
<thead>
<tr>
<th>Outcome after ROP vitrectomy</th>
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<tbody>
<tr>
<td>Lisa</td>
<td>Lisa</td>
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<tr>
<td><strong>VOD</strong></td>
<td>1/9.5 (≈ 10%)</td>
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<tr>
<td><strong>VOS</strong></td>
<td>1/15 (≈ 6%)</td>
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<tr>
<td>Normal elementary school with low vision help</td>
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2017-10-03
Outcome after ROP vitrectomy

Jaap

Gest Age 27 wks
BW 1100 gr
Presentation with ROP 4b OD and ROP 5b OS
Outcome after ROP vitrectomy

Jaap
VODcl 1:25 (~4%)
OS phthisis no light perception
Normal elementary school with low vision help

ROP vitrectomy

Extreme difficult surgery

Small numbers so you have to centralise surgery to improve experience and results

Still is prevention the best option: good screening and early treatment with laser
ROP vitrectomy

Despite low visual outcome after vitrectomy for ROP retinal detachment it is of high importance for the children.

Thank you for your attention.