Retinopathy of prematurity
ROP

Amir eftekhari MD

Nikookary eye center

Historty

- Was first described in 1942 and quickly became the primary cause of childhood blindness throughout the developed world.
- From retrolental fibroplasia to ROP
- The discovery of the relationship between supplementary oxygen and ROP in 1950 led to rigid curtailment of oxygen supplementation in the nursery, and a dramatic decrease

Pathophysiology of ROP

- Normally retinal vascularization proceeds from the optic disc to the periphery , begins at week 16 of gestation , and is completed nasally by 36 weeks of gestation , and temporally by 40 weeks gestation .
- The pathophysiology of ROP has 2 phase process :

1 – Cessation of normal retinal vasculature : decrease the level of VEGF and IGF-1

2- the second phase begins at 31-34 weeks postconseptional age : abundance of VEGF and IGF-1 secreted by ischemic retina as well as by the oxidative damage to endothelial cells , which leads to disorganized vascular growth .

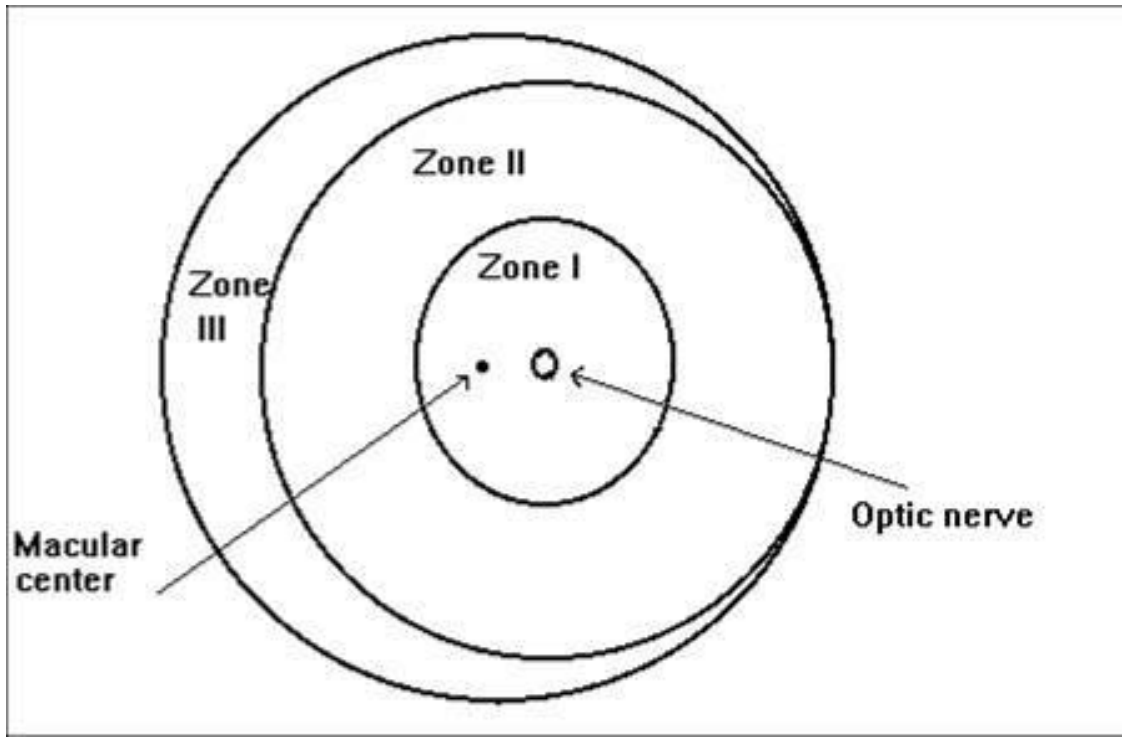
Risk factors

- Oxygen supplementation
- Short gestational period
- low birth weight
- Genetic predisposition
- Intercurrent illness
- Blood transfusion
- Pco2
- Weight gain
- Systemic IGF-1 level

International Classification of ROP

- Zone : 1 , 2, 3
- Stage : 1 ; 2 ; 3 ; 4A ; 4B ; 5
- Extent of stage
- Persence of plus disease

Zone of retina



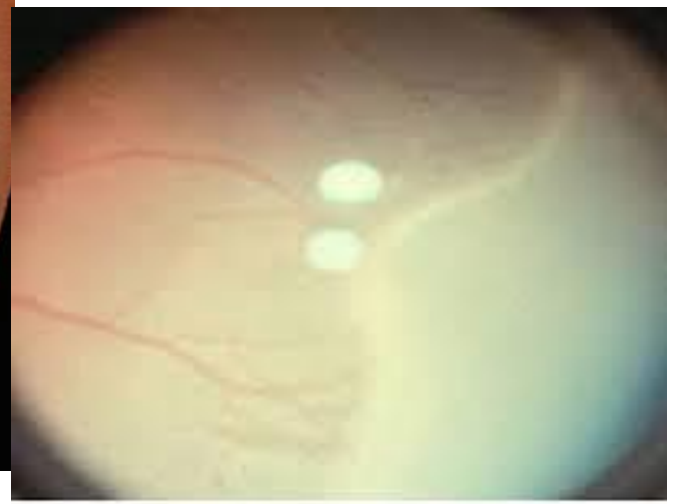
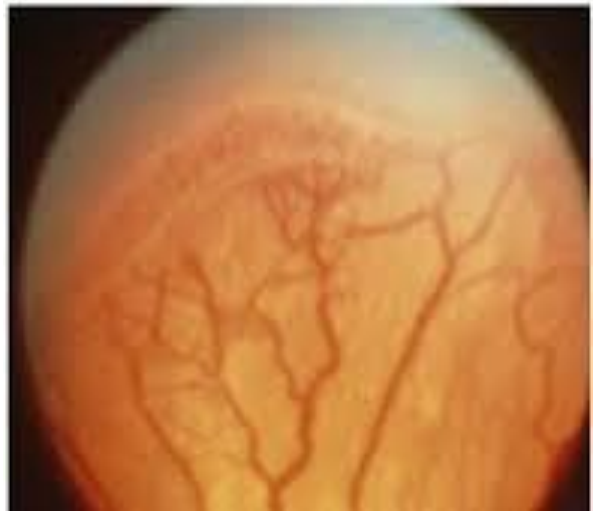
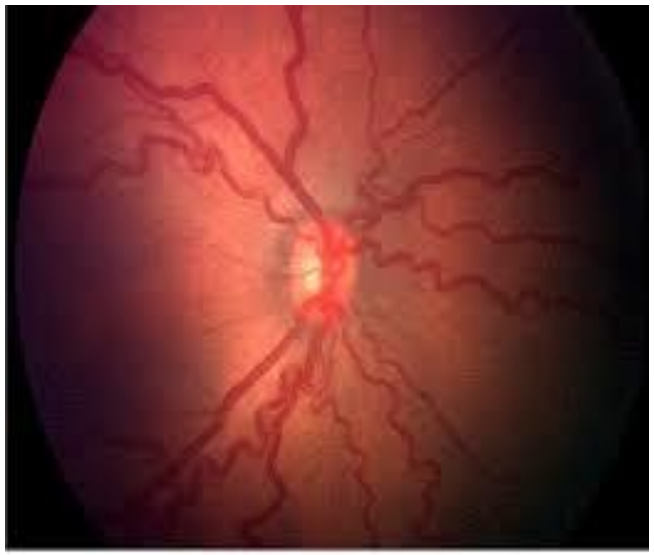


Fig. 2 Stage 2 ROP.





Time of screening

- The first examination should generally be performed :
- Between 4-6 weeks of postnatal age or
- Between 31 -33 weeks post menstrual age

Whichever is later

Criteria for screening

- American academy of pediatric : all infants with birth weight of less than 1500 gr or gestational age of 30 weeks or less

In IRAN

All infants with birth weight of less than 2000 gr or gestational age of 34 weeks or less

WINROP algorithm : systemic IGF -1 level and weight gain

Treatment

- Crayotherapy of avascular retina
- Lasertherapy of avascular retina
- Anti-VEGF treatment
- Surgery : scleral band
  deep vitrectomy