

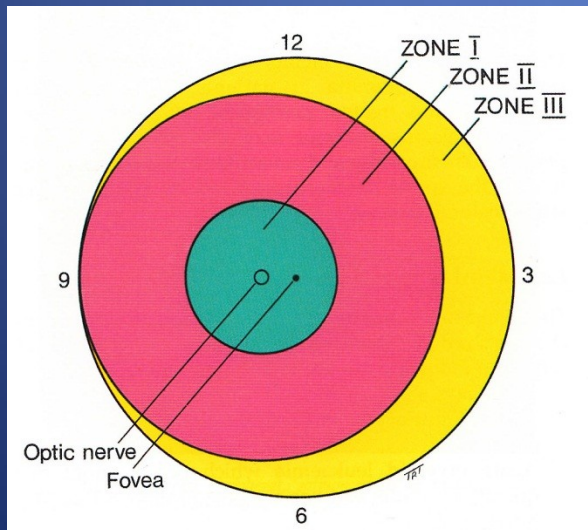
# Retinopathy of prematurity (ROP)

- Proliferative retinopathy
- Affects pre-term infants exposed to high ambient oxygen concentrations
- After 8 months of gestation retinal vessels reach the nasal periphery of retina, although they do not reach the temporal periphery until 1 month after delivery
- Incompletely vascularized temporal retina is susceptible to oxygen damage

# Clinical features

The severity of ROP can be determined according to **location, extent, stages and „plus“ disease.**

**Location** is determined according to 3 zones centred on the optic disc.



- **Zone 1** is bounded by the imaginary circle whose radius is twice the distance from the disc to the macula
- **Zone 2** extends from the edge of zone 1 to a point tangential to the nasal ora serrata and round to an area near temporal equator
- **Zone 3** consists of a residual temporal crescent anterior to zone 2

# Clinical features

## 5 stages

Staging is as follows:

- **Stage 1 = demarcation line.** Thin, tortuous, grey-white line which runs parallel with the ora serrata. The line separates the avascular immature peripheral retina from the vascular posterior retina.
- **Stage 2 = ridge.** The demarcation line develops into a ridge of tissue, which extends out of the plane of the retina. The ridge represents a mesenchymal shunt which joins veins with arteries.

# 5 stages

- **Stage 3** = ridge with extraretinal fibrovascular proliferation. Retinal and vitreous haemorrhage also develop.
- **Stage 4** = subtotal retinal detachment. Progression of fibrovascular proliferation give rise to a tractional detachment.
- **Stage 5** = total retinal detachment.

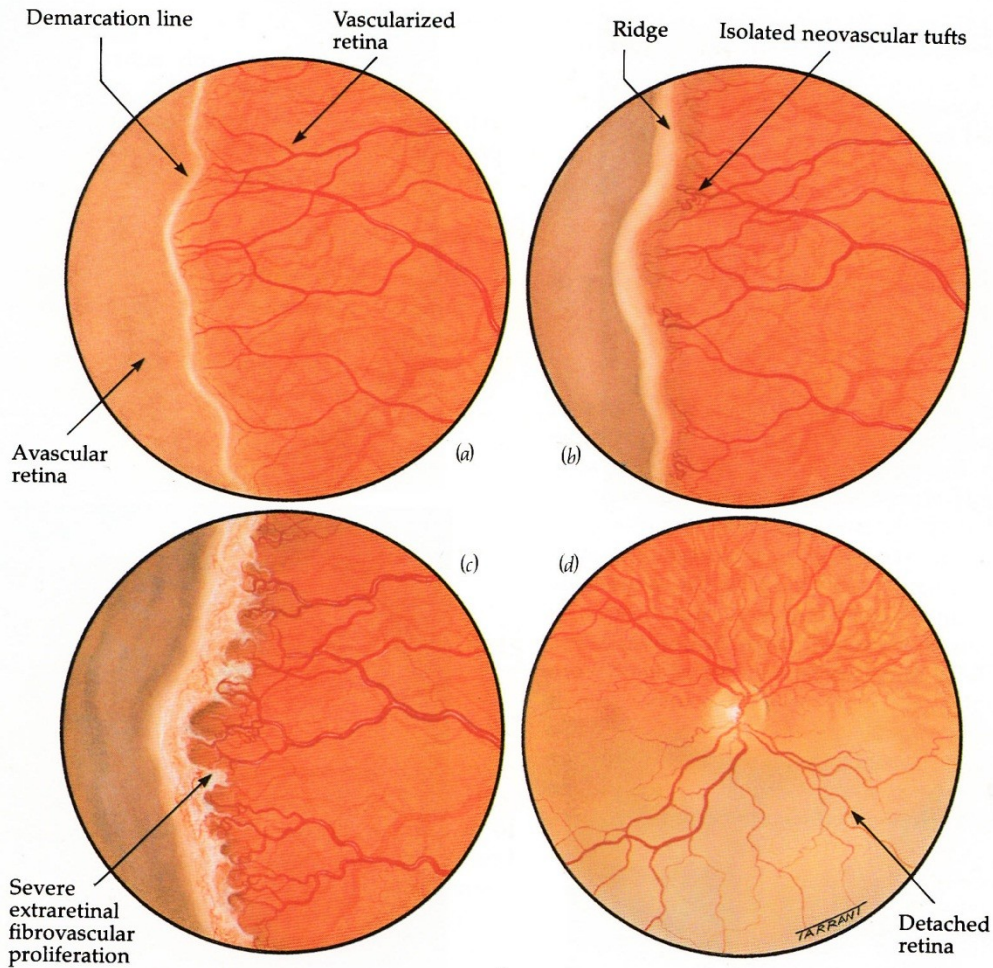


Figure 11.70 Progression of active retinopathy of prematurity (see text)

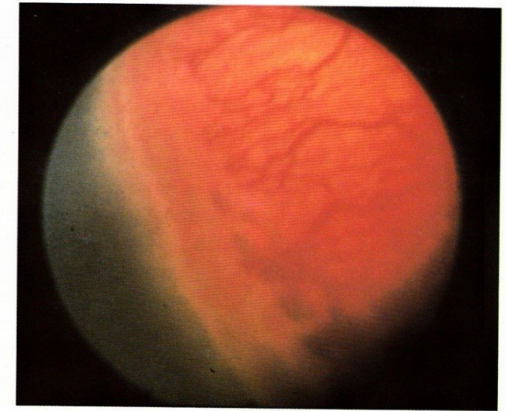


Figure 11.71 Elevated ridge (stage 2) in active retinopathy of prematurity

# „Plus“ disease

Is characterized by dilatation of the veins and tortuosity of the arterioles in the posterior fundus. When these changes are present, a „plus“ sign is added to the stage number.

# Screening

- Examination of the retina in all infants born at less than 36 months or weighing less than 1500g, who have received supplemental oxygen
- The pupils in a pre-term infant should be dilated (2,5% phenylephrine)



# Treatment

- Ablation of avascular immature retina by either cryotherapy or laser photocoagulation (stage 3)
- Scleral buckling with or without PPV (stage 4,5)