

Fundus Examination for Retinopathy of Prematurity

Fundus examination has assumed great importance in Special Care Neonatal Units (SCNU) since the advent of cryo and other therapies for retinopathy of prematurity (ROP)(1). Current incidence rates quoted in western literature among surviving babies of birth weight less than 1500 g are 35-60% for acute ROP and 1.5-9% for cicatricial ROP leading to partial or complete blindness. There are very few reports in Indian literature on this subject. Since the first case of ROP in 1990 in our center, more cases were detected due to increasing awareness and expertise in fundus examination in premature babies. Cases detected in April, May and June, 1994 were studied retrospectively and all high risk newborns admitted in SCNU in July and August, 1994 were studied prospectively.

The first examination was carried out at 2 weeks after birth or at 32 weeks of post menstrual age which ever came first. Follow up examinations were done every 2 weeks till 40 weeks of gestational age or as necessitated by fundal findings. Detailed maternal and neonatal data were recorded in all. All examinations were done by one experienced ophthalmologist by indirect ophthalmoscopy using wire speculum and phenylephrine and trypicamide eye drops.

Of 70 newborns admitted in SCNU between July to August 1994, 55 were studied prospectively. Nine were between 28-31 weeks, 19 between 32-34 weeks, 10 between 35-36 weeks and 17 above 36 weeks of gestational age. Thirteen cases were weighing 1-1.5 kg, 25 between 1.5-2 kg and 17 above 2 kg. Fundus was normal in 7 newborns. Peripherally grey retina was seen in 16 at initial examination which got normally vascularized subsequently. ROP Grade I was

seen in 12, ROP Grade II in 11 and ROP Grade III in 3 cases. Thus over all incidence of ROP was 47.2% (26/55). Six cases had plus disease. No intervention was needed in any case as none had "threshold" disease requiring cryotherapy (more than 5.5 contiguous clock hours or 8 total clock-hours of stage 3 with plus disease in zone 2 or zone 1). Other findings detected were albenic fundus in 1, chorioretinal scar in 2 and retinal hemorrhage in 3 cases.

Of 8 confirmed ROP cases studied retrospectively, 3 were between 28-31 weeks, 4 between 32-34 weeks and 1 between 35-36 weeks, of gestational age. Three cases were below 1 kg, 4 between 1-1.499 kg and 1 between 1.5-1.999 kg. One case had ROP Grade I, 3 ROP Grade II and 4 ROP Grade III with plus disease. Cryotherapy was done in later 4 cases in total 7 sittings with satisfactory response showing regression or arrest of ROP.

No major complications occurred following fundus examination or cryotherapy. Minor problems like lid swelling (n=20) and discharge (n=2) were noticed in a few.

A lot of work has been done on ROP in the west(2) since the first report of retrolental fibroplasia in 1942. The first report in Indian literature appears to be in 1992(3). Few SCNUs in India have systematically studied the problem(4). The incidence of ROP has varied from 0 to more than 50% in these. Our incidence is 47.2% in over all high risk babies below 2 kg. Our limited experience with cryotherapy is also satisfactory.

Interesting fundal findings other than ROP were seen in 10.9% (6.55) cases especially in older babies weighing above 1.5 kg. Four of these had birth asphyxia. Thus it is important to do routine fundus examination in all high risk babies.

WHO has recommended ROP screening in all newborns with birth weight

<1500 g or gestational age <31 weeks at birth irrespective of health or sickness status. The first fundal examination is recommended at 7 weeks post natally or at 36 weeks postmenstrual age for newborns of 26 weeks or more gestational age(5). However, higher gestation and weight groups also need to be screened in our setup as we noted significant ROP in some of these. Earlier examinations are also necessary for deducing hemorrhages and other findings in time.

We therefore, conclude that fundus examination is safe and should be under taken in all high risk newborns specially premature and very low birth weight babies as potentially treatable ROP and other conditions are seen in a significant number.

**Shakuntla Dawani,
Sudheer Parwani,
Shikhar Jain,**

*Departments of Pediatrics and Ophthalmology,
Choithram Hospital and Research Center,
Indore 452 001.*

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