Vaidya PR, Munshi NN. Neurobehavioral assessment versus Apgar score in cesarean section babies. J Obstet Gynec India 1989, 39: 200-202.

6. Hodgkinson R, Bhatt M, Kim SS, Grewal G, Marks FG. Neonatal neurobehavioral tests following cesarean section under general and spinal anesthesia. Am J Obstet Gynecol 1978, 132: 670-673.

Retinopathy of Prematurity—A Preliminary Report

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Retinopathy of prematurity (ROP) is a specific problem of the sick preterm neonate. With the advent of neonatal intensive care units and increasing survival of very low birth weight infants, there has been an increase in the incidence of ROP(1). Over the last decade, there has been an increased awareness of neonates and their problems in our country and a number of neonatal intensive care units have come up. With this and an increased survival of very low birth weight infants ROP must be occurring amongst this group of babies, but to date there is no literature on incidence of ROP in India. During the course of one year we screened 6 high risk babies for ROP of whom 5 had varying stages of ROP. These cases are presented in brief as a preliminary report.

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Material and Methods

Six babies who weighed less than 1500 g and required intensive care and oxygen therapy were screened for ROP. None of these babies were on ventilatory support, all had hood oxygen therapy at a rate of 2-5 litres per minute and none of them had blood gas analysis or oxygen saturation monitoring. Oxygen therapy was started because of cyanosis, apneic episodes or because the baby looked sick. These infants were first examined at 3-4 weeks of age before discharge and a repeat examination was done at 6 weeks of age in the follow up clinic. Subsequent checkups were done at 2-3 weeks intervals and the frequency of examination was reduced to 1-2 months if there was no progression.

Mydriasis was achieved by using 1% phenylephrine and 1% tropimide in neonates less than 6 weeks and with 2.5% phenylephrine in babies more than 6 weeks. Atropine was not used for mydriasis because one of the our babies had developed atropine toxicity after using 1% atropine ointment(2). Examination was done under topical anesthesia using a binocular indirect ophthalmoscope. Staging (*Table I*) was done following the International Classification of ROP(3-5).

Results

Of the 6 babies screened 5 had ROP and in one infant the fundus was normal. One baby had stage I, 3 had Stage II and 1 had Stage III ROP. (*Fig.*). The babies with

TABLE I–*International Classification of ROP*

Stage	Features
I	Demarcation line–a line seen between vascular and avascular retina
II	Ridge–(elevated demarcation line)
III	Ridge with extra retinal fibrovascular proliferation
IV	Sub total retinal detachment
A	–Not involving fovea
B	–Involving fovea
V	Total retinal detachment

PLUS disease refers to any stage of retinopathy which in addition had dilated and tortuous arteries and veins in the posterior pole.

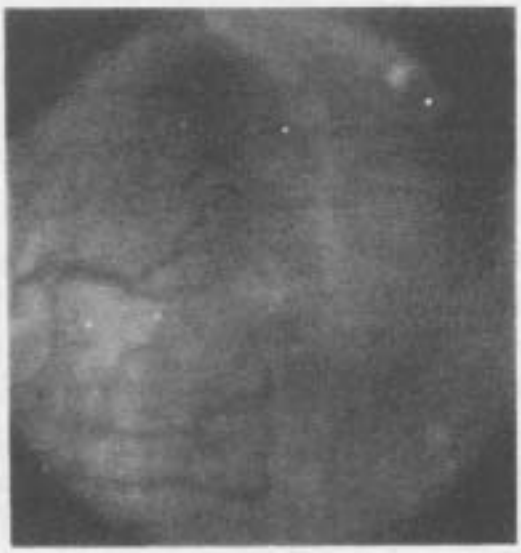

Fig. Stage III retinopathy of prematurity.

Stages I and II had not progressed. The baby with Stage III ROP had cryotherapy for both eyes in two sessions at 10 and 12 weeks of postnatal age. Cryotherapy was done using a cataract cryoprobe under ketamine anesthesia. The details of the cases are given in *Table II*.

Discussion

Retinopathy of prematurity is a vasoproliferative retinopathy principally occurring in preterm infants. There are two phases: (*i*) an acuter phase in which normal vasculogenesis is interrupted because of vasoconstriction and obliteration, this is followed by neovascularization; and (*ii*) a late or chronic phase of proliferation of membranes into the vitreous resulting in scarring and retinal detachment and significant visual loss. Almost 90% of acute ROP may have spontaneous regression and less than 10% go on to significant cicatrization(3,6).

The pathophysiology of ROP is unclear, though oxygen therapy and high arterial oxygen pressures are chiefly implicated. Other contributing factors include extreme prematurity, sepsis, hypercapnia, acidosis, hypoxia and bright light(3,6).

The incidence of ROP varies according to the birth weight and gestational age–more immature the baby, higher the incidence. There has been a changing pattern in the incidence of ROP over the last 30-40 years and now it seems to be a major problem chiefly in babies weighing less than 1000 g because of an increase in survival of these babies(1). The incidence of ROP induced blindness is 0.29% in babies weighing 1000-1500 g and increases to 2.7% in babies weighing less than 1000 g(7).

The exact incidence cannot be commented upon in the present study, as all infants less than 1500 g were not screened. In this study the maximum number of cases had Stage II ROP (3/5). The etiology in these cases might have been multifactorial: prematurity, oxygen therapy, sepsis, hypoxia, *etc*. The recommended treatment is conservative treatment and monitoring

TABLE II—*Clinical Features of the Cases*

Case	Weight (g)	Gestation (wks)	Neonatal problems therapy	Oxygen (h)	Stage of ROP	Follow up
I	1000	30	Preterm, sepsis, jaundice, apnea, necrotizing	96	Stage II at 8 wks.	1 yr no progression.
II	1000	32	Preterm, jaundice, necrotizing enterocolitis anemia	<24	No ROP	7 months normal
III	1490	32	Preterm, pneumonia, jaundice	96	Stage II ROP at 8 wks	No follow up
IV	900	30	Preterm, necrotizing enterocolitis, apnea jaundice	72	Stage III	5 months cryotherapy (at 10 & 12 wks) Subsequently gradual regression
V	1250	32	Preterm, pneumothorax, jaundice	72	Stage II at 8 wks	4 months, no progression
VI	1500	34	Preterm, jaundice, pneumothorax, sepsis, thrombocytopenia	72	Stage I at 8 wks	No follow up

in Stages I and II and cryotherapy in Stage III(3,8). In this study one child with Stage III ROP had cryotherapy for both the eyes based on the treatment protocol suggested by the cryotherapy for ROP co-operative group(9). The recommended follow up is ophthalmological examination of all oxygen exposed preterm babies less than 34 weeks gestation, at 6-8 weeks and follow up 2-3 weekly till no progression.

This was a pilot study to determine if ROP occurred in high risk neonates requiring intensive care treatment in our setting. Five out of six babies examined had ROP and this is highly significant. A prospective study of all high risk neonates would be essential to determine the exact incidence. Oxygen monitoring equipment should be present in all neonatal units and more stringent measures should be adopted for use of oxygen particularly in the absence of monitoring facilities.

REFERENCES

1. Hoon AN, Jan JE, Whitfield MF, Mc Cormick AQ, Richards DP, Robinson GC. Changing pattern of ROP—A 37 year clinical experience. Pediatrics, 1988, 82: 344-349.
2. Joseph VJ, Rekha S, Subba Rao SD, Chandrasekhara MK. An unusual case of atropine toxicity. Indian Pediatr 1991, 28: 943-944.
3. Flynn TJ. Retinopathy of prematurity. Pediatr Clin North Am 1987, 34: 1487-1516.
4. Committee on Classification of ROP: An International Classification of ROP. Arch Ophthalmol 1984, 102: 1130-1134.
5. Committee on Classification of ROP—An

International Classification of retinal detachment. Arch Ophthalmol 1987, 105: 906-912.

6. Friendly DS. Retinopathy of prematurity. *In:* Neonatology–Pathophysiology and Management of the Newborn, 3rd edn. Ed Avery GB Philadelphia, JB Lippincott Co, 1987, pp 1307-1310.
7. Gibson DL, Sheps BS, Hong Soo. Retinopathy of prematurity induced blindness. Pediatrics 1990, 86: 405-412.
8. Multicentre trial of cryotherapy for retinopathy of prematurity–Preliminary results. Pediatrics 1988, 81: 697-706.
9. Multicentre trial of cryotherapy for retinopathy of prematurity–Three mouth outcome Arch Ophthalmol 1990, 108: 195-204.

Anorectal Anomaly (Low) with Imperforate Hymen in a Newborn

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Simple imperforate hymen and other such anomalies present usually around menarche(1). Imperforate hymen presenting in neonatal period is quite unusual, moreover its association with imperforate anus is quite rare(2-5).

Case Report

A one-day-female baby presented with inability to pass meconium and a balloon shaped mass in vulval area (*Fig.*). The child was born after a full term normal delivery. General physical and systemic examination was within normal limits. Local examination showed absence of anal orifice at normal site and a spherical pale pink mass 6 cm in diameter protruding out from the vestibule, which was compressible. However, no meconium could be seen coming out of the lower end of vestibule inspite of presence of anovestibular fistula.

The spherical mass protruding out of the vestibule was nothing but ballooned out imperforate hymen which was incised in a cruciate manner when about 20 ml of opalescent fluid came out.

Simultaneously, anal cut back operation was done for anovestibular fistula.

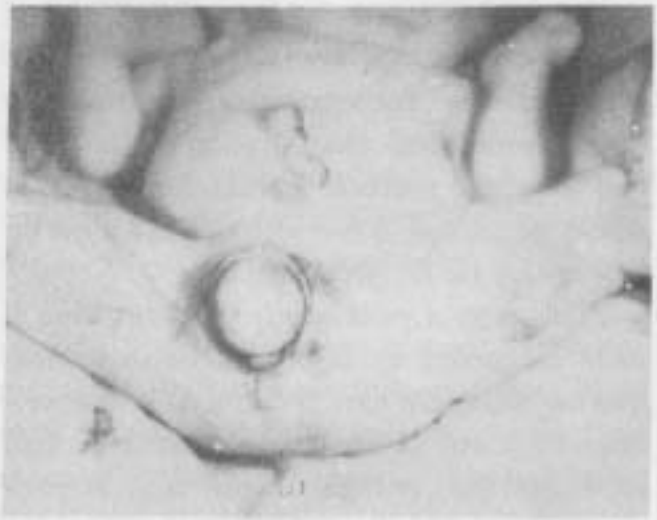

Fig. Clinical photograph of the patient showing ballooning out of imperforate hymen through vestibule and absence of normal anal orifice.

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