

# Retinal Detachment In Children

M TAYYIB

Institute of ophthalmology, Mayo hospital, Lahore.

Correspondence to: Mohammed Tayyib

Retinal detachment in children was felt to behave differently than adults. A study was then arranged to evaluate this. Children below the age of 12 years presenting to out patients department of institute of ophthalmology, Mayo hospital, Lahore with rhegmatogenous retinal detachments were included in the study. The minimum visual requirement was perception of light. Any child with a history of previous retinal surgery was excluded. The retina was studied in detail. They were then operated by one surgeon and results compared with results in adults. The study was of one calendar year (1994). The results indicated a much higher incidence of retinal dialysis, less aggressive proliferative vitreoretinopathy and a better prognosis than adults. The prognosis of retinal detachment surgery is better for children and this maybe due to a healthier pigment epithelium combined with the fact that media are clearer than adults and breaks are identified in a higher percentage of children.

**Key Words:** Retinal detachment, Children

Retinal detachment means the separation or splitting of the retina between the pigment epithelium and the sensory retina. This forms the natural plane of cleavage and whenever there is a break formation in the sensory layers fluid especially from the vitreous enters behind the sensory retina and causes this detachment. This is called the rhegmatogenous detachment. The other types of retinal detachments are the tractional and the exudative type of detachment. These two types were not included in this study. A study was carried out at the institute of ophthalmology to assess children presenting with rhegmatogenous retinal detachments. This was to assess the presenting complaints, cause and type of hole leading to the detachment. This was then compared to available data in adults to find out any significant difference.

## Patients and methods:

*The criteria for enrolment was laid down as follows:*

These children attended Institute of ophthalmology, Mayo hospital, Lahore. The maximum age limit was 12 years. There was no minimum age limit. The period was one calendar year (1994). These patients had no previous treatment. The reason for excluding previously treated children was the presence of iatrogenic holes, non availability of detailed operative records, subretinal haemorrhage and presence of silicone oil. The minimum visual requirement was perception of light with accurate projection in all quadrants. The intraocular pressure was within normal limits. The lens was clear or at least clear enough for a good view of the retina with the indirect ophthalmoscope. Aphakics were included in the study.

Children with penetrating trauma were excluded due to the presence of tractional element in the retinal detachment.

Once enrolled a detailed examination of the eye was performed including a retinal drawing. Every attempt

was made to locate the retinal break including an indirect ophthalmoscopy under anaesthesia prior to surgery before labelling and having no detectable break. The patients were operated at the next available list which was usually within a period of one week. They were post operatively followed up for a period of one year.

## Results:

A detailed analysis of the factors being studied is as follows:

A total number of 21 eyes of 20 patients were studied. In further analysis each eye was considered as a unit to simplify the understanding of results.

### Age

5 to 8 years. 7 patients

9 to 12 years 14 patients

This indicated a negligible chance of rhegmatogenous retinal detachment below the age of four years and the highest peak between nine to twelve years.

### Presenting complaints were

Loss of vision in 17 patients

Squint in 1 patient

Sequelae of blunt trauma 3 patients

### Predisposing factor identified were:

Myopia

Aphakia

Trauma

Marfanoid

Sticklers

Table 1: Causative lesions.

Causative lesion	n=
Dialysis	7
Multiple holes	7
Single retinal tear	5
Giant retinal tear	1
No detectable break	1

Table 2: Operative procedures performed

Operative procedure	n=
Retinal buckle	21
Drainage of subretinal fluid	15
Air tamponade	2
Silicone oil tamponade	2
Vitrectomy	4

Table 3: Secondary retinal changes.

Changes	n=
Demarcation lines	8
Subretinal fibrosis	4
Proliferative vitreoretinopathy	2
Retinal cysts	1

Table 4: Vitreous changes.

Changes	n=
Cells	21
Haze and veils	10
Liquefaction	10

Table 5 Vision and its post operative improvement

Vision	Pre-op	Post-op
6/12	4	6
6/60	11	7
CF	2	7
PL	4	2

This is a record at three month follow up. Six children were lost to follow up. They were from outside Lahore and as expected did not re attend despite repeated reminders. Those that did follow up for one year did not show much deviation from the above level of vision therefore this chart would seem to depict a reasonable picture of long term results.

### Discussion

The analysis of results indicate three important differences from rhegmatogenous retinal detachments in adults. The significant differences observed in this study were;

There was a much lower incidence of non visibility of the retinal break in children. This was due to three main reasons. Firstly the media were clearer than many adults, secondly the breaks were larger (higher incidence of dialysis and thirdly better pupillary dilatation. In this study only one patient had a non detectable retinal break which comes to around 5%. In adults this is reported in different percentages by various surgeons but the usual figure ranges between 10 to 15 %<sup>1</sup>.

The second difference was the less aggressive proliferative vitreoretinopathy. In adults most detachments after a few weeks would start showing star folds and stiffening of the retina. In children it was noted that this process occurred in a much lower percentage. In

our group 10% had proliferative vitreoretinopathy. In adults much higher percentages have been reported.<sup>2,3</sup>

Given time almost 90% of adults would develop proliferative vitreoretinopathy. In children it was noted that they developed subretinal fibrosis and demarcation lines indicating long standing retinal detachments but the vitreo retinopathy was much less. This may be due to healthier pigment epithelium which perhaps may not migrate as much and have less of a tendency to metaplasia into fibroblasts<sup>4</sup>.

Third difference was in the consistency of vitreous which seemed much better formed than that in adults with retinal detachments.

The final difference was in the surgical procedure needed and the results. Children needed vitrectomy and internal tamponade in a lower percentage than adults and the reattachment of the retina was better than adults. Here again the pigment epithelium may get the credit. However although the anatomical result was better than adults the visual outcome was similar as long standing maculae usually do not recover much vision. There were two cases where vision did not improve. Both had vitrectomy and internal tamponade, one with air and the other with silicone oil. They redetached due to increasing subretinal fibrosis and further surgery was not offered.

### Conclusion:

Children with retinal detachments have a higher incidence of retinal dialysis. This may be due to increased exposure to trauma. Rhegmatogenous retinal detachment below the age of four years is extremely uncommon and the maximum incidence is between the ages of nine to twelve years. This later increased incidence may well be due to an increased exposure to trauma and perhaps as the eyeball grows to its adult size the retina thins out somewhat. Prognosis is better in children and maybe due to a better formed vitreous and less proliferation of pigment cells the need for an internal procedure is also less as compared to adults

### References;

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