

JUVENILE RHEGMATOGENOUS RETINAL DETACHMENT IN MALAYSIA

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SUMMARY

45 patients (50 eyes) were treated for juvenile rhegmatogenous retinal detachments between August 1979 and July 1984. A review of these cases revealed high myopia and trauma to be the main aetiological factors. Eight-six per cent detachments were successfully reattached. Visual acuity of 6/36 or better was present in 16% preoperatively and in 52% postoperatively. Some of the characteristics of juvenile rhegmatogenous retinal detachments in Malaysian population are discussed.

INTRODUCTION

Rhegmatogenous retinal detachment in the juvenile age group is uncommon. Its occurrence is reported to vary between 2.7%¹ to 14%², depending upon the age limit selected for different studies. Juvenile retinal detachment has some unique characteristics and its pattern might vary from place to place. Trauma is generally considered to be the main aetiological factor and late diagnosis is a major problem of retinal detachments in young people.³ Early detection of high risk cases can improve the success rate of treat-

ment and proper counselling of patients as well as their parents has often been recommended.³

Clinical features and surgical results of rhegmatogenous retinal detachments in Malaysian children and young adults are presented in this communication as such information has not been reported before from this part of the world.

MATERIALS AND METHOD

Case records of 401 patients having retinal detachment of admitted to the Ophthalmology Department, Universiti Kebangsaan Malaysia, Kuala Lumpur between August 1979 and July 1984 were reviewed. During this period, 45 patients (50 eyes) aged 20 years and below were surgically treated for rhegmatogenous retinal detachment and were followed up for at least six months from the last operative procedure. Detailed analyses of these 50 eyes were made and observations presented in Tables I—VII. A success is defined as an anatomical reattachment of the retina for at least six months post-operatively.

RESULTS

50 juvenile eyes were operated upon for retinal detachment between August 1979 and July 1984. The youngest patient was five-years-old. There were 37 male and 13 female eyes. The majority of the patients (60%) were Chinese (Table I).

30% of the cases gave history of trauma to the eye, of which only one eye was myopic more than

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four diopters. Traumatic detachments were encountered predominantly in the males (93%). Thirty-six per cent of the eyes were myopic (Table II).

The majority of the myopic detachments were associated with refractive error of more than four diopters. Eight-seven per cent of the traumatic detachments developed within the first year after injury. Thirty-four per cent of the cases presented to the eye clinic within one month of getting the symptoms and most of them had myopic detachments. Seventy per cent of the patients were seen

within six months of the onset of symptoms (Table III).

Operative reattachment of the separated retina with the first procedure was achieved in 70%. further 16% settled with additional surgical intervention. Fourteen per cent were considered unsuccessful. Visual recovery was found to be poor in 48% of eyes in the present study (Table IV). These were mostly long-standing retinal detachments associated with some developmental retinal abnormality. Most of the eyes (76%) were treated by scleral buckling combined with encirclearge and

TABLE I
AGE, RACE AND SEX DISTRIBUTION OF RETINAL DETACHMENT

Age (yrs)	Number	Male	Female	Chinese	Malays	Indian	Others
5 - 8	3	3	0	3	0	0	0
9 - 12	12	6	6	9	1	1	1
13 - 16	14	11	3	5	7	2	0
17 - 20	21	17	4	13	7	1	0
Total	50	37	13	30	15	4	1
(%)	100	74	26	60	30	8	2

TABLE II
TYPE OF RETINAL BREAK IN DIFFERENT DETACHMENTS

Cause	Dialysis	Horse shoe tear	Round hole	Giant tear	Total (%)
Myopia	3	3	11	1	18 (36)
Aphakia	3		3		3 (6)
RLF			2		2 (4)
Marfan's Syndrome		2		1	3 (6)
Congenital Dialysis	3				3 (6)
Juvenile Retinoschiasis	1		1		2 (4)
Traumatic					15 (30)
— Blunt	4	3	6		13
— Penetrating	2				2
Others		1	3		4 (8)
Total	14	8	26	2	50
(%)	28	16	52	4	100

NB: Figures within parenthesis refer to percentages.

TABLE III
DURATION OF RETINAL DETACHMENT IN VARIOUS CATEGORIES

Duration (Months)	Trauma	Myopia	Aphakia	RLF	Marfan	Dialysis	Schiasis	Others	Total
1	1	10	1	0	3	0	0	2	17
1-6	7	6	0	0	0	2	1	2	18
7-12	3	1					1		5
over 12	2	0	1	2	0	0	0	0	5
unknown	2	1	1	0	0	1	0	0	5
Total	15	18	3	2	3	3	2	4	

drainage of the subretinal fluid. Only limited success was obtained in six cases who were treated by vitrectomy and introduction of silicon oil inside the globe.

Lens opacities and macular complications were responsible for poor visual outcome in most cases. Rise of intraocular pressure occurred in 10% and these were mostly traumatised eyes, which possibly suffered trabecular damage at the time of initial injury.

DISCUSSION

Juvenile rhegmatogenous retinal detachment has certain unique characteristics which distinguishes it from the senile variety. High preponderance of boys, a higher incidence of traumatic aetiology, large breaks, more prevalence of long-standing as well as total retinal separation and late diagnosis of the disease are some of its outstanding features. Jules Gonin Club has defined juvenile retinal detachment as "those occurring in the first two decades of life".⁴ Based on this criteria, an incidence of 12.5% was noted in this series of Malaysian population (Table V). This figure is slightly higher than 5.6% reported by Hilton and Norton,⁴ but lower than 20% found by Chen and Dumas.²

Trauma is generally accepted to be the leading cause of retinal detachment in young people, usually accounting for about 40% of cases.³⁻⁵ A 30% incidence of definite trauma is slightly

less in the present series. 87% of traumatic detachments in this study were detected within one year of sustaining the injury (average 11.2 months). About 25% of traumatic detachments are reported

TABLE IV
VISION RESULTS OF SURGICAL MANAGEMENT

Vision	Pre-operation (%)	Post-operation (%)
6/6 - 6/12	4 (8)	7 (14)
6/18 - 6/36	4 (8)	19 (38)
6/60 or less	42 (84)	24 (48)

TABLE V
INCIDENCE JUVENILE RHEGMATOGENOUS OF RETINAL DETACHMENT

Type of detachment	Under 16 years	Under 20 years
Trauma	9	15
Myopia	13	18
Aphakia	1	3
RLF	1	2
Dialysis	3	3
Marfan	1	3
Schiasis	2	2
Others	0	4
Total (%)	29 (7.25)	50 (12.5)

within the first month after injury.⁴ However 84.4% occurred within two years of blunt ocular trauma in the study of Winslow and Tasman.³ They suggested that any patient with severe ocular injury should have a careful examination of the retina periodically at least for two years to rule out the development of a subclinical retinal detachment. This study has also confirmed this observation as only one case (7%) in this series developed in the detachment seven years after the injury.

Multiple round or oval holes were not rare in traumatic detachments studied in this report. Similar observation was also made by Scharf and Zonis.⁵ It seems to suggest that trauma in some instances might be a mere trigger factor in causing retinal separation in an eye having a preexisting retinal pathology.

Thirty-six per cent incidence of myopic retinal detachment in this study is high when compared to the figure of 15%³ and 20%⁴ reported in previous series. Increased occurrence of degenerative myopia in the Chinese community seems to account for it.⁶ Myopia of more than four diopters has been responsible for about one-third of all the detachments in this study. Unlike the traumatic cases, bilateral detachments occurred in four out of 18 myopic patients or 22%. High myopes who have had a detachment in one eye are at significant risk to develop a detachment in the fellow eye. Such patients as well as their parents should be alerted to the early symptoms of detachment and must be closely watched at regular intervals.

It is generally recognised that juvenile retinal detachments are more prevalent among males.^{3,4} The present study has also supported this finding (Table VI). Increased incidence of trauma as well as some of the inherited retinal diseases like sexlinked juvenile retinoschiasis and congenital-retinal dialysis⁷ in the male sex probably account for this trend.

An anatomical cure rate of 86% observed in the present study compared favourably with figures of 80.3% by Winslow and Tasman,³ 89% by Hilton and Norton,⁴ 75% by Hudson⁸ and 76% by

TABLE VI
SEX DISTRIBUTION OF DIFFERENT DETACHMENTS

Type of detachment	Male (%)	Female (%)	Total
Trauma	14 (28)	1 (2)	15
Myopia	11 (22)	7 (14)	18
Aphakia	2 (4)	1 (2)	3
RLF	1 (2)	1 (2)	2
Dialysis	3 (6)	0	3
Marfan	1 (2)	2 (4)	3
Schiasis	2 (4)	0	2
Others	3 (6)	1 (2)	4
Total	37 (74)	13 (26)	

Johnston *et. al.*⁹ Preoperative and postoperative visual acuities are compared in Table IV. It shows that 52% of eyes achieved visual acuity of 6/36 or better post-operatively compared to the pre-operative figure of 16%. This closely resembles 58.5% figure reported by Winslow and Tasman.³ Poor visual recovery was seen mostly in retinal detachments associated with some developmental retinal pathology. Surgery was considered unsuccessful in seven cases (14%) in the present report and their analysis has revealed that the main cause of failure was the presence of large retinal breaks (three dialysis and two giant tears). Large breaks are said to be more common in younger patients.⁴ An incidence of 28% of dialysis seen in this study has confirmed this belief.

Detachments in the juvenile age group tend to remain unnoticed for a long time and in most cases develop signs of chronic separation by the time these are discovered. Retinal detachment usually presents as a unilateral disease, and it is hardly surprising that such a problem might escape notice for a considerable time. Diagnosis is often made late either during routine visual screening of school children or when such cases present with a squint or lazy eye. The present Malaysian study has revealed that myopia is the leading cause of rhegmatogenous juvenile retinal detachment in this region as opposed to trauma reported from other parts of the world. Myopic

TABLE VII
POST-OPERATIVE VISUAL RESULTS IN VARIOUS TYPES OF
RETINAL DETACHMENTS

Type of detachment	No.	Visual acuity		
		6/6 – 6/12	6/18 – 6/36	6/60 or less
Traumatic	15	3	6	6
Myopic	18	2	10	6
Aphakic	3	0	1	2
RLF	2	0	0	2
Dialysis	3	0	0	3
Marfan	3	0	0	3
J. Retinoschiasis	2	1	1	0
Others	4	1	1	2
Total		7	19	24
(%)		(14)	(38)	(48)

detachments presented comparatively early and surgical results were conceivably much better in these cases (Table VII). However accidents are likely to increase in developing countries like Malaysia and the incidence of traumatic detachments will also rise in such countries. Modern microsurgical repair of initial ocular trauma can reduce the risk of traumatic retinal detachments. Awareness of retrolental fibroplasia, better surgical treatment of childhood cataracts and proper care of developmental retinal abnormalities in children and young adults are important considerations for reducing the occurrence of juvenile retinal detachment.

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