

Clinical profile of patients presenting with rhegmatogenous retinal detachment

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Abstract

Background: The aim of the study was to evaluate the epidemiological characteristics, risk factors, characteristic of retinal detachment in patients presenting with rhegmatogenous retinal detachment. This study was conducted among patients presenting at Sarojini Devi Eye Hospital. **Material and Methods:** The study duration spanned over a period from august 2008 to September 2010. Patients presenting to the ophthalmology OPD and diagnosed with rhegmatogenous retinal detachment were included in the study. Cases with recurrent retinal detachment, tractional retinal detachment, Combined retinal detachments, exudative retinal detachment. Secondary detachments after vitrectomy, strabismus or ocular surgeries were excluded from the study. **Results:** Fifty patients who were diagnosed with a rhegmatogenous retinal detachment were included in the study. Majority of the patients belonged to the age group of 40 to 60 (18, 36%) years with a mean age of 40 years. 29 patients (58%) were males. In 21 patients (42%) left eye was involved and in right eye was involved. In two patients both eyes were involved. 15 (30%) patients presented to the clinic within 2 weeks and 66 % of the patients presented within 5 weeks

Key Words: Rhegmatogenous Retinal detachment, Myopia, Trauma.

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INTRODUCTION

Retinal detachment is separation of Retinal Pigment epithelium from neurosensory retina. Incidence of this entity has been reported as 1 in 15,000 population¹. Though not very common, it is a potentially blinding disease. The fall of vision is profound in cases where the macula is involved. Various risk factors like trauma, myopia, cataract surgery have been observed as the risk factors for retinal detachment^{2,3}. Prognosis for these patients is based upon factors like the duration and extent

of detachment⁴. We studied the demographic profile, risk factors, characteristics of the of the detachment in patients presenting with rhegmatogenous retinal detachment in our hospital.

MATERIALS AND METHODS

The aim of the study was to evaluate the epidemiological characteristics, risk factors, characteristic of retinal detachment in patients presenting with rhegmatogenous retinal detachment. This study was conducted among patients presenting at Sarojini Devi Eye Hospital and Deccan college of Medical Sciences. The study duration spanned over a period from august 2010 to September 2016.

Inclusion Criteria: Patients presenting to the ophthalmology OPD and diagnosed with rhegmatogenous retinal detachment were included in the study

Exclusion Criteria

Cases with recurrent retinal detachment, tractional retinal detachment, Combined retinal detachments, exudative retinal detachment. Secondary detachments after vitrectomy, strabismus or ocular surgeries were excluded

from the study. The data collected included age at presentation, gender, affected eye, nature and duration of presenting symptoms. History of trauma, previous ocular surgeries and any complications, Spectacle usage, laser treatment for any lesions, Similar complaints in the fellow eye was specifically noted Comprehensive ocular examination was done including visual acuity and refractive status of the affected eye, Slit lamp examination looking for pupillary reactions, anterior segment findings. Gonioscopy with goldmann four mirror, Fundus examination was done by 90D lens with the slit lamp biomicroscopy and indirect ophthalmoscopy with scleral indentation was performed. Details of the detachment comprising of quadrant of retina detached, macular attachment status, type, site, number, extent of break, presence and grading of Proliferative Vitreous Retinopathy, presence of any lattice degeneration was noted. The collected data was analyzed regarding the age distributions, sex predominance, eye involved, associated factors. Characteristics of detachment including quadrants of retina detached, status of macula, and the characteristics of breaks including type, location, number, and extent of breaks, proliferative vitreoretinopathy grading C1 or worse were analyzed.

OBSERVATION AND RESULTS

Fifty patients who were diagnosed with a rhegmatogenous retinal detachment were included in the study. Majority of the patients belonged to the age group of 40 to 60 (18, 36%) years with a mean age of 40 years. 29 patients (58%) were males. In 21 patients (42%) left eye was involved and in right eye was involved. In two patients both eyes were involved. 15 (30%) patients presented to the clinic within 2 weeks and 66 % of the patients presented within 5 weeks.

Table 1: Age distribution

Age (in years)	Number (%)
< 20	13 (26%)
20- 40	13 (26%)
40- 60	18 (36%)
>60	6 (12%)
Total	50(100%)

Table 2: Duration of symptoms

Duration of symptoms	Number (%)
<2 weeks	15 (30%)
3-5 weeks	17 (34%)
6-8 weeks	5 (10%)
9-12 weeks	5 (10%)
12- 27 weeks	8 (16%)
Total	50 (100%)

Associated factors

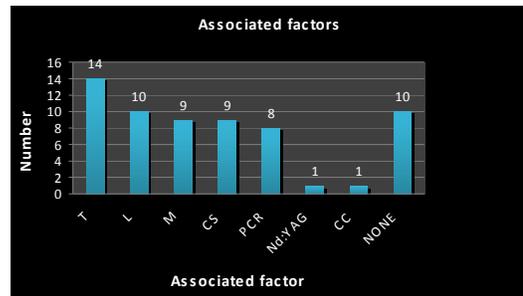


Figure 1:

T – Trauma, M – Myopia, L – Lattice degeneration, CS – Cataract surgery, PCR –posterior capsular rent, YAG cap – Nd:YAG laser capsulotomy, Cc – Coloboma choroid. Trauma was an associated factor in 28% patients. Traumatic RRD had a male predominance affecting younger age groups (mean age of 28 years) and was the main predisposing factor (54%) in patients aged less than 40. Myopia of > 4 D was an associated factor in 18% of the patients. It was the second most common risk factor in patients of the age group less than 40 (34.6%). Cataract surgery was an associated factor seen in 16 patients. Posterior capsular dehiscence was a risk factor in 8 patients (16%) Nd: YAG laser Capsulotomy was the risk factor in 1 patient. Mean age at presentation for pseudophakic /Aphakic RRD was 54 years. Lattice degeneration was found in 20% (10) patients, associated with myopia in 10 % (5) patients. Multiple risk factors were seen in 14% (7) patients. 5 patients had myopia and lattice, one patient had trauma and cataract surgery as the associated factor, one patient had cataract surgery and lattice degeneration. Coloboma choroid was observed in one patient. Bilateral retinal detachments were seen in 2 patients. No predisposing factor was seen in 22% patients.

Characteristics of retinal detachment

Table 3: Quadrants involved

Quadrants involved	Number (%)
Total RD	36(72%)
Superior	6(12%)
Inferior	2 (4%)
Temporal	5(10%)
Nasal	1 (2%)
Total	50(100%)

In Total retinal detachment was found in 36 (72%) patients, associated choroidal detachment was found in 3 (6%) patients. In subtotal RD, superior quadrants were involved in 6 (12%) patients, temporal in 5 (10%) patients inferior quadrants in 2 (4%), nasal in one patient. Macula was on in only 3 (6%) patients. Single breaks were found in 23 (46%) patients, multiple breaks were seen in 12 (24%) and breaks were not visualized in 15

patients (30%). Breaks were found in supero temporal quadrant in 17 (34%) patients, superonasal quadrant in 13 (26%), inferonasal quadrant in 4 (8%) patients, in 2 (4%) patients breaks were found in inferotemporal quadrant. Extent of the break was more than one clock hour in 4 patients and one clock hour in 5 patients.

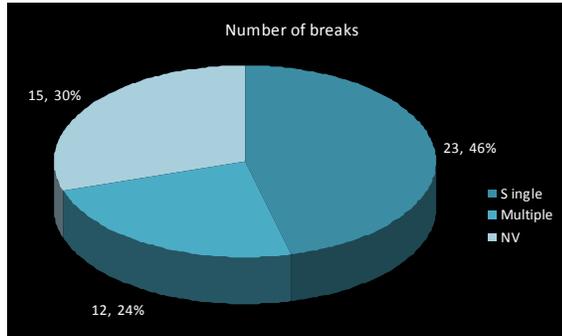


Figure 2: (NV= not visualized)

Location of breaks	Number (%)
Supero temporal	16 (32%)
Supero nasal	12 (24%)
Infero temporal	2 (4%)
Inferonasal	4 (8%)
Not visualized	15 (30%)
Total	50(100%)

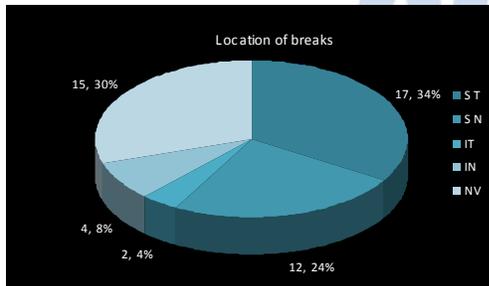


Figure 3:

Type of break	Number (%)
Horse shoe tear	17(34%)
Holes	8(16%)
Horse shoe tear and holes	6(12%)
Giant retinal tear	4 (8%)
Not visualized	15 (30%)
Total	50 (100%)

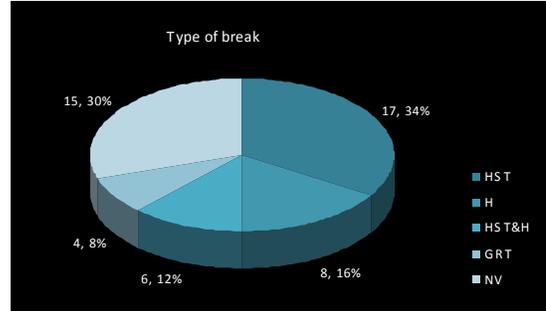


Figure 4:

HST -Horse shoe tear, H - Holes; HST and H - Horse shoe tear and holes, GRT - Giant retinal tear; NV -Not visualized Horse shoe tears were seen in 17 (34%) patients. Holes and horse shoe tear were found in 6 (12%) patients. Atrophic hole were seen in 8 (16%) patients of whom 3 patients had a single atrophic hole. Multiple atrophic holes are associated with lattice. Giant retinal tears were found in 4 (8%) patients, these patients and all of them had a history of blunt trauma. PVR changes were not found in 10 (20%) patients, 15 (30%) patients had C1 grade or worse. Rhegmatogenous retinal detachment was found in 2 patients in other eye, lattice degeneration was found in 9 (18%) patients in the fellow eye.

PVR changes	Number (%)
None	10 (20%)
A,B	25 (50%)
C,>C	15 (30%)
Total	50(100%)

Other eye	Number (%)
Retinal detachment	2 (4%)
Lattice degeneration	6(12%)
Lattice degeneration and cataract	2 (14%)
Lattice degeneration and pseudophakia	1(2%)
Cataract	13 (26%)
Pseudophakia/ aphakia	7(14%)
Normal	19 (38%)
Total	50(100%)

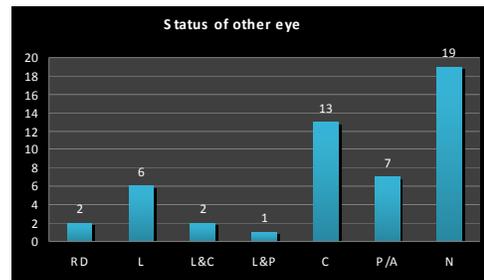


Figure 5:

RD - Retinal detachment; L -Lattice degeneration; L and C -Lattice degeneration and cataract; L and P -Lattice degeneration and pseudophakia C-Cataract, P/A - Pseudophakia/ aphakia

DISCUSSION

The mean age at presentation in our study was 40 years. In a study conducted by Yorston *et al*⁶. on retinal detachment in developing countries the mean age of presentation was 38 years. In a study conducted by Beijing rhegmatogenous retinal detachment study group¹¹, mean age of presentation was 51 years. In a study conducted by S. Jalali *et al*⁷, in south India mean age at presentation was 38.4 years. In our study mean duration of symptoms was 7.2 weeks, 54% of patients were symptomatic for a month before presentation. In a study conducted by Yorston *et al*⁶ in developing countries, 44 % people were symptomatic for over a month before presenting to the clinic. In a study conducted by S. Jalali *et al*⁷ in south India 46.6% were symptomatic for over a month before presentation. Male to female ratio was 1.38: 1 in our study (58% males). In a study conducted by Poking horne⁹ *et al* showed preponderance in men with male to female ratio of 1.3: 1. In a study conducted by S. Jalali *et al*⁷, 74.5% were males. In a study conducted by Rosman *et al*¹⁰. retinal detachment was seen in 70.5% males. Traumatic rhegmatogenous retinal detachment accounted for 28% of the detachments and showed a male preponderance. Trauma was an associated factor in 54% of rhegmatogenous retinal detachments in patients younger than 40 and. In a study conducted by S. Jalali *et al*⁷ on retinal detachment in south India, in 16.2% patient's blunt trauma was the contributing factor. In a study conducted by Peters AL,¹⁴ in black South Africans, trauma was the contributing factor in 30% retinal detachments. The mean age of patients with trauma associated retinal detachment was 28 years in our study. In a study conducted by Beijing rhegmatogenous retinal detachment study group¹¹ median age of patients with trauma associated RD was 31 years. In our study, myopia of > 4 D was the predisposing factor in 18% of the patients. In a study conducted by Yorston *et al*⁶. 18.4% of retinal detachments were contributed by myopia. In a study conducted by Rosman¹⁰ *et al*, myopia >5D was associated in 34% patients. Study conducted by Ling¹³ *et al* showed 26% of cases with associated myopia. Lattice degeneration was an associated factor in 20% of patients of whom 10% were myopic. A study conducted in south India by S. Jalali⁷ showed that 26.8% eyes had lattice and a similar proportion (31.3%) were also myopic. In a study conducted by Ling *et al*¹³ lattice degeneration was an

associated factor in 35% patients. In our study cataract surgery complicated by a posterior capsular rent was seen in 16% patients. Cataract surgery was an associated factor in 35.1% in a study conducted by S. Jalali *et al*⁷ in south India. Study conducted by Rosman¹⁰ *et al* showed 11.6% patients with cataract surgery as an associated factor. No obvious predisposing factor was seen in 20% of patients'. In a study conducted by S. Jalali *et al*⁷ no obvious predisposing factor was found in 15.3% patients. Multiple contributory factors were found in 14% % of our patients. In a study conducted by S. Jalali *et al*⁷ more than one contributory factor was present in 5% patients. Most common location of break in our study was supero temporal in 34% patients. In a study conducted by Rosman *et al*¹⁰ breaks were seen in supero temporal quadrant in 40.7% patients. Single retinal breaks were found in 46% patients in our study. In a study conducted by Rosman *et al*¹⁰ single breaks were seen in 61% patients. In a study conducted by Ling *et al*¹³ single breaks were seen in 57% patients. Horse shoe tears caused more than forty percent of retinal detachments in our study. In a study conducted by Peter AL¹⁴ showed 28% of RD due to a horse shoe tear. Study conducted by S. Jalali *et al*⁷ in south India showed 47% of detachments due to horse shoe tears. Study conducted by Ling *et al*¹³ showed horse shoe tears in 65% of detachments. In our study, atrophic holes were seen in 16% of retinal detachments. In a study conducted by Peter AL¹⁴ atrophic holes were seen in 29% patients. In a study conducted by S. Jalali *et al*⁷ atrophic holes were seen in 29.4% patients. Giant retinal tears were seen in 8 % of the patients in our study. In a study conducted by Yorston, *et al*⁶ 8.3% of all retinal detachments were associated with giant retinal tears in Kenya. Study conducted by S. Jalali⁶ showed 4% patients with giant retinal tears. Study conducted by Ling *et al*¹³ showed 2% of patients with giant retinal tears. Macula was off in 94% of patients in our study. Study conducted by Yorston *et al*⁶, showed a macula off detachment rate of 86.8% in developing countries. Study conducted in UK by Sullivan PM *et al*¹² showed a macula off detachment rate of 69%. study conducted by Rosman *et al*¹⁰ showed macula off status in 80% of patients. In our study 30% of the patients had a PVR grading of C1 or worse. In a study conducted by Yorston *et al*⁶ PVR grade C1 or worse were seen in 33% eyes. Study conducted by S. Jalali *et al*⁷ showed PVR grade c1 or worse in 31.9% patients. Study conducted by Ling *et al*¹³ showed 4% patients with PVR grading C1 or worse. In our study retinal detachment in the fellow eye was seen in 4% patients. In a study conducted by S. Jalali *et al*⁷ retinal detachment in fellow eye was seen in 3.1% patients.

Table 8: Epidemiology and risk factors of retinal detachment

	Mean age	Males	Trauma	Myopia	Lattice	Cataract surgery, PCR
S.Jalali <i>et al</i>	38	74.5%	16.2%	NA	26.8%	35.1%
Yorston <i>et al</i>	38.4	NA	8%	18.4%	NA	24.1%
Rosman <i>et al</i>	46.1	43%	3.3%	34%	41.7%	13.3%
Current study	40	58%	28%	18%	20%	16%

Table 9: Characteristics of retinal detachment

	Single breaks	HST	Holes	GRT	Macula off	PVR C>C	Fellow eye RD
S.Jalali <i>et al</i>	NA	47%	29.4%	4%	86.8%	31.9%	3.1%
Ling <i>et al</i>	57%	65%	17%	2%	53%	4%	NA
Yorston <i>et al</i>	NA	28%	29.4%	8.3%	91.9%	18%	38%
Current study	46%	46%	16%	8%	94%	30%	4%

CONCLUSION

Retinal detachment is a potential cause of blindness. The results of the current study, consistent with previous studies conducted in developing countries, highlighted that ocular trauma, previous cataract surgery, lattice degeneration and high myopia were risk factors in the development of retinal detachment. Frequent and early examination of the retinal periphery after ocular trauma is important to detect any peripheral breaks and treat prophylactically in order to preserve the vision. Surgical events such as posterior capsule tear and zonule dehiscence in contributing to retinal detachment should be managed properly in order to avoid complications. Majority of the patients showed a total retinal detachment with macula off, horse shoe tear was the common type of breaks and they were found in superotemporal quadrant in majority of the cases. The characteristics of presentation were consistent with other studies conducted in developing countries. The percentage of macula off patients was comparatively higher in our study than in the studies conducted in developed countries. The reason for which could be delayed presentation which could in turn result in poor visual outcome.

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