IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 11 Ser.14 (November. 2019), PP 05-09
www.iosrjournals.org

Subconjunctival Hemorrhage: It's Prevalenceand Associatedfactorsin Bundelkhand Region: Observational Study

Dr. Jitendra Kumar[1],* Dr. Rajesh Kumar Shakya[2],Dr. Dinesh Kr. Raina[3]
[1](Associate Professor & Head, Dept. of ophthalmology, MLB Medical College Jhansi, India)
[2](Junior Resident, Dept. of Ophthalmology, MLB Medical College Jhansi,India)
[3.] (Senior Resident, Dept. of Medicine, MLB Medical College Jhansi, India
*Corresponding Author:Dr. Rajesh Kumar Shakya

Abstract:*In this study we observed the associated conditions, gender distribution of patients with subconjunctival hemorrhage (SCH) seen conjunctival areas of the diseasein Bundelkhand region. We thought that high frequency of traumatic SCH is due to low socio economical level of the population and also the region is an agricultural area. Work injuries are used to be seen in many clinics of the hospital. Spontaneous SCH was most frequently associated with hypertension. This finding was consistent with previous studies.Total 500 patients with SCH were evaluated. They consisted 323(64.6%) male and 177 (35.4%) female. Out of 500 patients with SCH, 349 (69.8%) had traumatic and 151(30.2%) had spontaneous SCH. The majority of the spontaneous SCH group was male (27.6%) and intraumatic group also (72.4%). Our study showing that Men were more likely to have traumatic SCH. The mean ages for traumatic and spontaneous SCH respectively were 29.56 ± 7.34and 58.32 ± 11.24. Among the 151 patients with spontaneous SCH, hypertension was the common associated condition in 60 (39.8%) patients. Associated ocular findings were; redness in periorbital area, periorbital ecchymosis, periorbital edema, and laceration on upper eye lid or lower lid.). SCH was more common in temporal areas than other areas 41.3%. The right and left eye were involved equally.Most common associated condition in spontaneous SCH was hypertension while in majority of cases no apparent cause was seen.Patients with traumatic SCH were younger than patients with spontaneous SCH.*

Keywords:*Subconjunctival hemorrhage,Hypertension,Schirmer's test, Tear break-up time(TUBT).*

Date of Submission: 18-11-2019 Date of Acceptance: 04-12-2019

I. Introduction

Subconjunctival hemorrhage (SCH) is a common condition of the eye that has characteristic features, such as the painless acute appearance of a sharply circumscribed redness of bleeding underneath the conjunctiva in the absence of discharge, and inflammation in contagious areas.**Subconjunctival bleeding**, also known as **subconjunctival hemorrhage**, is bleeding from a small blood vessel in the outer layer of the eye (the conjunctiva) into the space between the conjunctiva and the sclera[1]. It results in a red spot in the white of the eye. The condition usually becomes apparent in the externally exposed part of the bulbar conjunctiva, where the blood readily finds space in the loose subconjunctival tissue[2,3].A subconjunctival hemorrhage is usually flat with sharply defined edges. The initially red hemorrhage turns orange and yellow when blood degradation and absorption take place, with absorption usually being complete at four to seven days after the hemorrhage[4]. Due to the benign natural course of the disorder, therapy is normally not necessary; however, a subconjunctival hemorrhage frequently causes considerable alarm to the patient, therefore, most affected patients may have sought medical help[5,6]. Causes of subconjunctival hemorrhage are numerous, with local trauma being one of the most common etiologies. Other cases result from spontaneous rupture of a conjunctival vessel and is called non-traumatic subconjunctival hemorrhage (NTSCH) or spontaneous subconjunctival hemorrhage and could be caused by various factors or without obvious causes[7,8].A small proportion of NTSCH are associated with systemic hemorrhagic diseases, including platelet and coagulation disorders6 anticoagulant or antiplatelet therapy[9] systemic vascular disease such as arterial hypertension or diabetes mellitus8 or other relevant disorders. Reduction in visual acuity is not expected. It can vary from dot-blot hemorrhages to extensive areas of bleeding that render the underlying sclera invisible[10,11]. Histologically, SCH can be defined as hemorrhage between the conjunctiva and episcleral, and the blood elements are found in the substantia propria of the conjunctiva when a subconjunctival vessel breaks[12,13]. It is thought that this significant increase depends on the increase of prevalence of systemic hypertension after the age of 50 years; also, diabetes mellitus, hyperlipidemia, and the use of anticoagulation therapy becomes more frequent with aging. Generally, SCH is most often seen in the inferior and temporal areas of the conjunctiva, but trauma causes localized hemorrhage at the site of injury, especially in the temporal areas[14]. The fibrous connections under the conjunctiva, including elastic and connective tissues, become more fragile with age, and this can be the reason for easy spread of hemorrhage in

older patients[15,16]. Traumatic SCH is more likely to remain localized around the site of impact compared to diffuse SCH-associated systemic vascular disorders .The objective of the study was to determine associated conditions, gender distribution and the incidence of SCH at each conjunctival location.

II. Materialand Methods

A total 500 patients who were newly/ diagnosed as a case of Sub conjunctival hemorrhage (SCH), were included in this Prospective observational study which was held on out patient's clinic of the Department of Ophthalmology and Department of Medicine, MLB medical college, Jhansi, Uttar Pradesh, India over a period of24 months fromNovember 2017 to October 2019. The procedures followed were in accordance with the ethical standards committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000. The necessary permission from the Ethical and Research Committee was obtained for the study.

Inclusion criteria:

1. Any patients of SCH come in Out Patients department.
2. Patients with SCH with or without affected visual acuity.
3. Both male and female patients were included in the study.
4. No age limitation was taken in this study.

Exclusion criteria:

1. Patients with other common causes of red eye such as conjunctivitis; episcleritis and scleritis; keratitis and corneal ulcer;
2. Iritis; glaucoma and other common conditions such as dry eye and blepharitis were excluded.
3. Subconjunctival hemorrhage associated with globe rupture were also excluded.
4. Patients with history of any previous intraocular surgery except, Cataract surgery.
5. Patients with history of corneal transplantation and LASIK surgery.

All exclusion and inclusion criteriawere strictly followed. Initial started with patient's particulars and evaluated with clear history SCH (as traumatic or spontaneous). Additional information about past history, surgical history, any ocular medication/surgery, education and socio-economic status of the patients were taken. Ocular examination as Visual acuity, Slit lamp examination, TBUT, eye staining with Fluorescein dye, Schirmer's test, Tear break-up time (TBUT), refraction, fundus examination with direct/Indirect ophthalmoscopy, Non contact tonometry for inclusion and exclusion of patients.

III. Results

N= Total number of patients with Sub Conjunctival Hemorrhage (500).

Table 1: Male and Female ratio in study

Male	Female
323	177

According to **table 1** the male female ratio in this study was 1.8:1

Table 2: Showing type of hemorrhage (Traumatic or Spontaneous) in the total patients

Variables	Traumatic SCH	Spontaneous SCH	Total
Gender			
Male	234	89	323
Female	115	62	177
Total all type of SCH cases	349	151	500

Table 3:Showing involvement of eyes (Right or Left or both) of all the patients

Eye involvement	Right eye	Left eye
Traumatic SCH	174	176
Spontaneous SCH	81	76
Total eyes	255	252

Table 4: Location of Sub Conjunctival hemorrhage in eyes of the patients

	Traumatic SCH	Spontaneous SCH	
Location			
Nasal	101	41	142
Superior	41	25	66
Temporal	156	72	228
Inferior	81	34	115

Total	379	172	551

Graph 1: Showing location of hemorrhage in eyes of patients

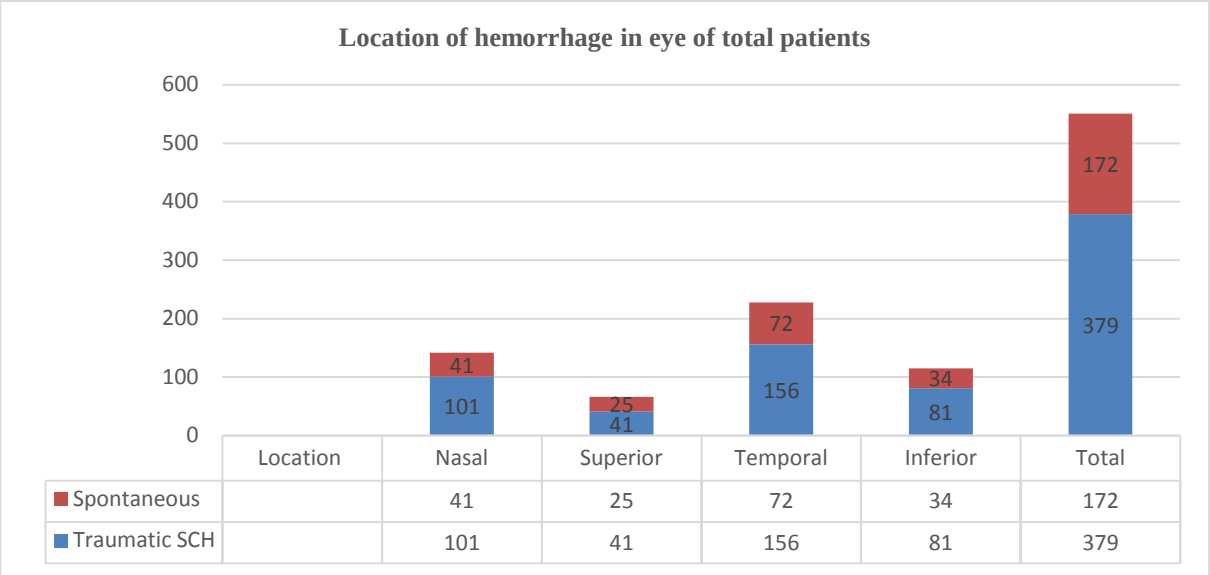

Table 5: Age distribution of subconjunctival hemorrhage

Range (years)	Traumatic subconjunctival hemorrhage	Spontaneous subconjunctival hemorrhage	Total
0-10	9(2.6%)	6(4%)	15
11-20	43(12.3%)	7(4.6%)	50
21-30	88(25.2%)	11(7.3%)	99
31-40	92(26.3%)	25(16.5%)	117
>40	117(33.6 %)	102(67.6%)	219
Mean Age	29.56 ± 7.34	58.32 ± 11.24	
Total	349	151	500
p<0.05			

Table no 5: shows that the mean age of patients in group 1 is 29.56±7.34 years and the mean age of group 2 is 58.32±11.24 years. "p Value" was< 0.05 which was statistically significant.

Table 6: Spontaneous subconjunctival hemorrhage conditions

Spontaneous subconjunctival hemorrhage conditions	No of patient
Hypertension	60(39.8%)
Vomiting	2(1.3%)
Sneezing	3(2%)
Decreased platelet count	12(7.9%)
Patients taking aspirin	13(8.6%)
Not diagnose cause	61(40.4%)
Total	151

Table7:Involvement areas frequency of subconjunctival hemorrhage in all the patients

	Frequency	Percent
Nasal	142	25.8
Superior	66	12.0
Temporal	228	41.3
Inferior	115	20.9
Total	551	100

FIGURES

Figure 1: Right eye Temporal sub Conjunctival hemorrhage

Figure2: LefteyeTraumaticSubConjunctivalhemorrhage

Figure 3: Both eyes Traumatic Sub Conjunctival hemorrhage

IV. Discussion

In this study we observed the associated conditions, gender distribution of patients with SCH and most seen conjunctival areas of the disease. Unlike previous studies, in this study the frequency of trauma in patients with SCH was higher up to 69.8%. In a study Mimura et al reported the ratio of the traumatic SCH as 8.7%.5 In another study Kaimbo et al found this ratio as 51.7%. We thought that high frequency of traumatic SCH is due to low socio economical level of the population and also the region is an agricultural area. Work injuries are used to be seen in many clinics of the hospital. Spontaneous SCH was most frequently associated with hypertension. This finding was consistent with previous studies. Other associated conditions were rare and included vomiting and sneezing.SCH was found more frequently in males in traumatic cases and in spontaneous cases. The higher risk in male is probably related to working in heavy work and having more aggressive nature. SCH was more often found in temporal areas. In the traumatic patients with SCH it is an expected finding. There may be two reasons. One of them is protective effect of the nose for the nasal area. The other is large

temporal bulbar conjunctiva. SCH is reported to be related to some other etiologies as; febrile systemic infections dengue,malaria, carotid cavernous fistula and delivery.

V. Conclusion

Total 500 patients with SCH were evaluated. They consisted 323(64.6%) male and 177 (35.4%) female. Characteristics of patients showing in (Table -1). Out of 500 patients with SCH, 349 (69.8%) had traumatic and 151(30.2%) had spontaneous SCH (Table -2). The majority of the spontaneous SCH group was male (27.6%) and in traumatic group also (72.4%). Our study showing that Men were more likely to have traumatic SCH. Distribution of SCH showing in (Table - 4).The mean ages for traumatic and spontaneous SCH respectively were 29.56 ± 7.34and 58.32 ± 11.24(Table-5).Among the 151 patients with spontaneous SCH, hypertension was the common associated condition in 60 (39.8%) patients (Table-6). Patients with traumatic SCH were younger than patients with spontaneous SCH. Associated ocular findings were; redness in periorbital area, periorbital ecchymosis, periorbital edema, and laceration on upper eye lid or lower lid.). SCH was more common in temporal areas than other areas 41.3% (Table -7). The right and left eye were involved equally. There were no statistically significant differences between spontaneous and traumatic SCH with respect to eye involvement (p=0.98) and location of SCH (p=0.48).

References

[1]. "What is a Subconjunctival Hemorrhage?". *American Academy of Ophthalmology*. 3 July 2019. Retrieved 17 October 2019.
[2]. Pitts JF, Jardine AG, Murray SB, Barker NH. Spontaneous subconjunctival hemorrhage– a sign of Hypertension? Br J Ophthalmol. 1992;76(5):297-299.
[3]. Wilson RJ. Subconjunctival hemorrhage: overview and management. J Am Optom Assoc. 1986;57(3):376-380.
[4]. Mimura T, Yamagami S, Funatsu H, Usui T, Ono K, Araie M, et al. Management of subconjunctival haematoma by tissue plasminogen activator. Clin Experiment Ophthalmol. 2005;33:541-542.
[5]. Mimura T, Usui T, Yamagami S, Funatsu H, Noma H, Honda N, et al. Recent causes of subconjunctival hemorrhage. Ophthalmologica. 2010;224:133.
[6]. Superstein R, Gomolin JE, Hammouda W, Rosenberg A, Overbury O, Arsenault C. Prevalence of ocular hemorrhage in patients receiving warfarin therapy. Can J Ophthalmol. 2000;35:385–389.
[7]. Bodack MI. A warfarin-induced subconjunctival hemorrhage. Optometry. 2007;78(3):113–118.
[8]. Groomer AE, Terry JE, Westblom TU. Subconjunctival and external hemorrhage secondary to oral anticoagulation. J Am Optom Assoc. 1990;61(10):770775.
[9]. KaimboWaKaimbo D. Epidemiology of traumatic and spontaneous subconjunctival haemorrhages in Congo. Bull. Soc. Belge Ophthalmology. 2009;311:31-36.
[10]. Lynn WA, Lightman S. The eye in systemic infection. Lancet. 2004;364:1439-1450.
[11]. Kaimbo WA Kaimbo D, Spileers W, Missotten L. Ocular emergencies in Kinshasa (Democratic Republic of Congo). Bull Soc belgeOphthalmol. 2002;284:49-53.
[12]. Lee HM, Naor J, De Angelis D, Rootman DS. Primary localised conjunctival amyloidosis presenting with recurrence of subconjunctival hemorrhage. Am J Ophthalmol. 2000;129(2):245-247.
[13]. Najjar DM, Youssef OH, Flanagan JC. Palpebral subconjunctival heamorrhages in herpes Zosterophthalmicus. OphthalPlastReconstr Surg. 2008;24(2):162-164.
[14]. Kaimbo WA Kaimbo D, Missotten L. Severe subconjunctival haemorrhage associated with malaria. Bull Soc BelgeOphthalmol. 1999;271:51.
[15]. Pong JC, Lam DK, Lai JS. Spontaneous subconjunctival hemorrhage secondary to carotid-cavernous fistula. Clin Experiment Ophthalmol. 2008;36(1):90-96
[16]. Jain IS, Singh YP, Grupta SL, Gupta A. Ocular hazards during birth. J PediatrOphthalmol Strabismus. 1980;17(1):14-16.

Dr. Rajesh Kumar Shakya. "Subconjunctival Hemorrhage: It's Prevalence and Associated factors inbundelkh and Region: Observational Study." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 11, 2019, pp 05-09.