IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 17, Issue 10 Ver. 12 (October. 2018), PP 18-22
www.iosrjournals.org

SubconjunctivalHaemorhage: Its Etiologies,Risk Factors and Demography in Bundelkhand Region.

Dr. Jitendra Kumar[1], Dr. Jyoti Sharma[2]
[1.](*Associate Professor & Head of Department. of Ophthalmology, M.L.B Medical College Jhansi, India).*
[2.](*Junior Resident, DepartmentofOphthalmology, M.L.B Medical College Jhansi, India).*
Corresponding Author:Dr.Jitendra Kumar

Abstract: *SubconjunctivalHaemorrhage is a benign disorder that is a common cause of acute ocular redness. The major risk factors include trauma and contact lens usage in younger patients, whereas among the elderly, systemic vascular diseases such as hypertension, diabetes, and arteriosclerosis are more common. In patients in whom subconjunctival hemorrhage is recurrent or persistent, further evaluation, including workup for systemic hypertension, bleeding disorders, systemic and ocular malignancies, and drug side effects, is warranted.This Observational non interventional study to know the etiologies, risk factors, demography and associated features of SubconjunctivalHaemorhage was carried out in Department of Ophthalmology, Maharani LaxmiBai Medical College, Jhansi, Uttar Pradesh, India over a period of 6 months from Oct. 2017 to March 2018 on OPD basis.In total 100 patients with subconjuctivalhaemorhage were evaluated history was taken, systemic examination was done and every patient sent for investigations regarding bleeding profile, lipid profileand then the outcome was evaluated.Out of one hundred patients 56% had SCH due to trauma while 44% had spontaneous SCH. The most common systemic cause of spontaneous SCH in our study was found to be Hypertension (36.4%). Male (68%) were predominantly affected. Conjunctiva was divided into 4 quadrants most commonly temporal quadrant was found to be affected (38%).Recurrence was seen only in 6% of cases.*

Keywords: *SubconjunctivalHaemorrhage, systemic vascular diseases, blooddyscrasias.*

Date of Submission: 16-10-2018 Date of acceptance: 31-10-2018

I. Introduction

Subconjunctivalhaemorrhage (SCH) is a common clinical condition of eye that is characterized by blood accumulation in the subconjunctival space. Generally it is a benign disorder and can be caused by trauma, hypertension, anticoagulant therapy, elevated venous pressure (Valsalva maneuver, coughing, vomiting) and acute hemorrhagic conjunctivitis.[1-8] Elderly patients and patients with vascular disorders such as hypertension, arteriosclerosis and diabetes tend to have weak-walled conjunctival vessels that may rupture easily under stress.[1-5]SCH is characterized by painless acute appearance of a sharply circumscribed redness of bleeding underneath the conjunctiva in the absence of discharge, and inflammation in contagious areas.[9] 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] Histologically, SCH can be defined as hemorrhage between the conjunctiva and episclera, and the blood elements are found in the substantiapropria of the conjunctiva when a subconjunctival vessel breaks.[11,12]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.[13]SCHs are observed more often in summer, and this is related to the high frequency of local traumas in this season.[1,5]

Causes of SCH:

The first study on the risk factors was reported by **Fukuyama et al**[1] in 1990, who showed that local trauma, systemic hypertension, acute conjunctivitis, and diabetes mellitus were the main causes or associated conditions of SCH. On the other hand, the cause of SCH was undetermined in about half of the patients. The relationship between age, local trauma, and systemic hypertension was assessed, and it was demonstrated that hypertension was seen more often in patients older than 50 years; however, local trauma was an important cause in all age groups.[1,5]**Mimura etal**[5] showed that the major risk factors for SCH are trauma and contact lens usage in younger patients, and among older patients it is mostly associated with systemic vascular disorders, such as systemic hypertension, diabetes, and arteriosclerosis, which causes the walls of the blood vessels to become fragile. So the causes of SCH are divided as idiopathic, ocular causes and systemic causes. Ocular causes include local trauma to the globe, injuries to the orbit, acute inflammation of the conjunctiva, conjunctival tumors, conjunctivochalasis, ocular amyloidosis, contact lens usage, ocular surgery, and ocular

adnexal tumors.Systemic causes that may lead to SCH can be classified as systemic vascular diseases which include Arteiosclerosis ,Systemic Hypertension and Diabetes, sudden severe venous congestion, Blooddyscrasias, systemic trauma, acute febrile systemic diseases, drugs, carotid cavernous fistulas (CCFs), menstruation, and delivery in newborns.

There is not any approved treatment to accelerate the resolution and absorption of SCH. The first treatment reported in the literature was air therapy.[14]A patient with a severe SCH caused by acute hemorrhagic conjunctivitis was treated with nasal and temporal subconjunctival injection of tissue plasminogen activator.[15]SCH was a new area of usage for tissue plasminogen activator alongside its use in vitreous, anterior chamber, and glaucoma filter bleb to induce the clearance of fibrin clots.[16-18]Failure to resolve hemorrhage in persistent or recurrent cases suggests a serious underlying cause. A careful history is the most important step in identifying whether there is a serious underlying condition that may require more detailed examination and treatment.

II. Methods And Material

A total of 100 patients were included in this observational non interventional study conducted in the Department of Ophthalmology, Maharani LaxmiBai Medical College, Jhansi, Uttar Pradesh, India over a period of 6 months from Oct. 2017 to March 2018. 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:
Patients in the age group 10-65 years Both male and female patients. Patient giving consent for the examination
Exclusion criteria:
Patients with other common causes of red eye such as conjunctivitis, episcleritis and scleritis,keratitis and corneal ulcer, iritis, glaucoma. Patients with dry eye and blepharitis. Patients with SCH associated with globe rupture were also excluded.

Verbal informed consent was obtained from all study patients. Each patient's age, gender, medical history and ocular history were assessed at the initial visit. The diagnosis of SCH was based on inspection and slitlamp examination. The medical history included the presence of systemic diseases, such as diabetes, hypertension, cardiovascular abnormality or any bleeding disorder, medications (e.g., aspirin, coumadin), eye rubbing, sneezing, heavy lifting, trauma and Valsalva. Clinical examination included complete ocular examination including inspection, slitlamp examination and funduscopy. Patients with SCH were classified in two groups; Traumatic and Spontaneous. Traumatic SCH was defined as SCH resulting from trauma. Spontaneous SCH was defined as any SCH not related to trauma.The anterior segment was examined and location of SCH noted on slit lamp examination. Following this the patient also underwent blood investigations including lipid profile, complete blood count which consist of platelet count , Bleeding time, Clotting time, Prothrombin time , Partial Thromboplastin time and INR.

III. Results

One hundred eyes of 100 patients with SCH were evaluated.And the results were tabulated under following headings:

Demography **–**shown in table 1 and 2.

Table 1- showing sex distribution of SCH.

Gender	**No.of patients**	**Percentage**
Male	68	68%
Female	32	32%
Total	100	100%

Above table shows male preponderance in our study.

Table 2- showing age distribution of SCH.

Age in years	**No. of patients**	**Percentage**
10 to 20	15	15%
21 to 30	30	30%
31 to 40	22	22%
41 to 50	16	16%
51 to 60	11	11%
61 to 65	6	6%
Total	100	100%

Above table shows that maximum patient with SCH were in the age group 21 to 30 years, that is younger age group most commonly affected.

Table 3 – showing causes of SCH.

Cause of SCH	No. of patients	Percentage
Traumatic SCH	56	56%
Spontaneous SCH	44	44%
Total	100	100%

Above table showing that traumatic SCH occurred more commonly than spontaneous SCH in Bundelkhand region.

Table 4 – showing various causes of spontaneous SCH.

Causes	No. of patients	Percentage
Unknown cause	19	43.2%
Hypertension	16	36.4%
Diabetes	2	4.5%
Bleeding disorder	1	2.3%
Drugs(anticoagulant or antiplatelet therapy)	1	2.3%
Sudden Sneezing or vomiting	5	11.4%
Total	44	100%

Above table shows that among spontaneous causes idiopathic is the most common while among spontaneous systemic causes of SCH , Hypertension is the most common systemic cause.

Table 5- shows site of SCH.

Site of SCH	No. of patients	Percentage
Superior	11	11%
Inferior	22	22%
Temporal	38	38%
Nasal	13	13%
Diffuse/ generalized	16	16%
Total	100	100%

Above table shows that most common quadrant of SCH involvement is temporal quadrant.

Table 6 – showing frequency of occurrence of SCH.

Frequency	No. of patients	Percentage
Single episode	94	94%
Recurrence	6	6%
Total	100	100%

Above table shows that single episodes were more common than recurrences.

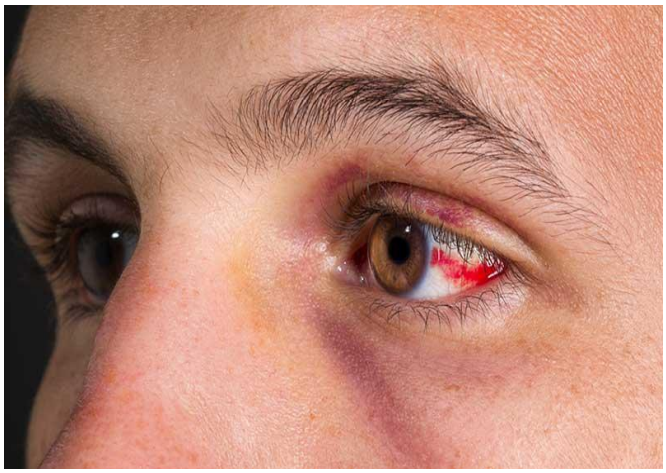

Figure 1: Showing SCH in the patient in temporal region due to trauma.

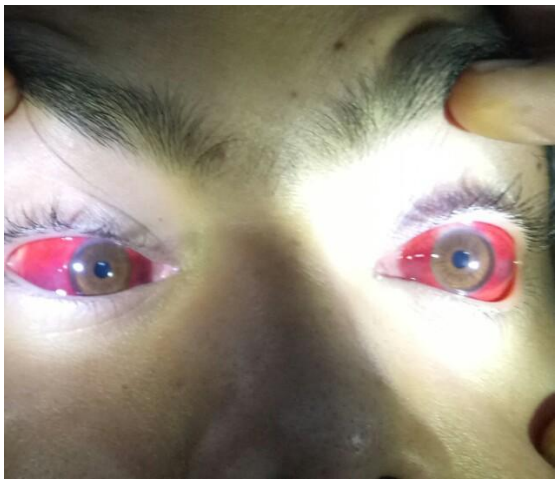

Figure 2: Showing Bilateral, diffuse SCH in a male patient suffering from thrombophilia.

IV. Discussion

Although SCH is a common benign condition which is painless and not associated with diminuition of vision but there are only few studies done. In this study we observed the associated conditions, gender and age distribution of patients with SCH and quadrant of conjunctival areas involved in SCH.

In this study trauma as the cause of SCHwas found more common (56%), our study was consistent with **Kaimbo et al** where traumatic SCH was more common and seen in51.7% patients,[9] similar results were seen in a study done by **NedimeSahinoglu-Keskeket al** which showed that 68% SCH were traumatic.[19] But unlike our study **Mimura etal** reported the ratio of the traumatic SCH as 8.7%.[5,9]We thought that high frequency of traumatic SCH is due to low socio economical level, more road traffic accidents in this region. Also the region is an agricultural area so work injuries are seen commonly.

Systemic cause of Spontaneous SCH was most frequently associated with hypertension (36.4%). This finding was consistent with previous studies.[2,9] Other associated conditions were rare and included vomiting and sneezing.

In our study the patients with SCH were young (21-30 years – 30%). The main reason for this was assumed to be that trauma was more common etiology in our patients. Also SCH was found more frequently in males (68%) than female (32%). The higher risk in male is probably related to working in heavy work.

SCH was more often found in temporal areas (38%). 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.

V. Conclusion

In this observational non interventional study about etiology,risk factors, gender distribution and location of SCH. We found that traumatic SCH was seen more than spontaneous SCH in our region and men were more commonly affected than females. Younger age group under greater risk of SCH. Spontaneous SCH was most commonly idiopathic and most common systemic disease associated with spontaneous SCH was hypertension. The patients with SCH must be referred to an internal medicine clinic for detailed systemic evaluation.

References

[1]. Fukuyama J, Hayasaka S, Yamada K, Setogawa T. Causes of subconjunctivalhemorrhage.Ophthalmologica. 1990;200:63–67. [PubMed]
[2]. Pitts JF, Jardine AG, Murray SB, Barker NH. Spontaneous subconjunctivalhaemorrhage– a sign of Hypertension? Br J Ophthalmol. 1992;76(5):297–299. [PMC free article] [PubMed]
[3]. Wilson RJ. Subconjunctival hemorrhage: overview and management. J Am Optom Assoc. 1986;57(3):376–380. [PubMed]
[4]. Mimura T, Yamagami S, Funatsu H, Usui T, Ono K, Araie M, et al. Management of subconjunctivalhaematoma by tissue plasminogen activator. Clin Experiment Ophthalmol. 2005;33:541–542. [PubMed]
[5]. Mimura T, Usui T, Yamagami S, Funatsu H, Noma H, Honda N, et al. Recent causes of subconjunctival hemorrhage. Ophthalmologica. 2010;224 [PubMed]
[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. [PubMed]
[7]. Bodack MI. A warfarin-induced subconjunctival hemorrhage. Optometry. 2007;78(3):113–118.[PubMed]
[8]. Groomer AE, Terry JE, Westblom TU. Subconjunctival and external hemorrhage secondary to oral anticoagulation. J Am Optom Assoc. 1990;61(10):770–775. [PubMed]

[9]. KaimboWa, Kaimbo D. Epidemiology of traumatic and spontaneous subconjunctivalhaemorrhages in Congo. Bull SocBelgeOphthalmol. 2009;311:31–36. [PubMed]
[10]. Leibowitz HM. The red eye. N Engl J Med. 2000;343(5):345–351. [PubMed]
[11]. Duke-Elder S. System of Ophthalmology Diseases of the Outer Eye. VIII. London: Henry Kimpton; 1965. Conjunctival diseases; pp. 34–39.
[12]. Yanoff M, Fine BS. Ocular Pathology. Maryland Heights (MO): Mosby; 1996. Conjunctiva; pp. 206–207.
[13]. Mimura T, Yamagami S, Usui T, et al. Location and extent of subconjunctivalhamorrhage. Ophthalmologica. 2010;224(2):90–95. [PubMed]
[14]. Richards RD. Subconjunctival hemorrhage: treatment with air therapy. Eye Ear Nose Throat Mon. 1965;44:59. [PubMed]
[15]. Mimura T, Yamagami S, Funatsu H, et al. Management of subconjunctivalhaematoma by tissue plasminogen activator. Clin Experiment Ophthalmol. 2005;33(5):541–542. [PubMed]
[16]. Lambrou FH, Snyder RW, Williams GA, Lewandowski M. Treatment of experimental intravitreal fibrin with tissue plasminogen activator. Am J Ophthalmol. 1987;104(6):619–623. [PubMed]
[17]. Lambrou FH, Snyder RW, Wiliams GA. Use of tissue plasminogen activator in experimental hyphema. Arch Ophthalmol. 1987;105(7):995–997. [PubMed]
[18]. Szymanski A. Promotion of glaucoma filter bleb with tissue plasminogen activator after sclerotomy under a clot. IntOphthalmol. 1992;16(4–5):387–390. [PubMed
[19]. Analysis of subconjunctivalhemorrhage.NedimeSahinoglu-Keskek, SelimCevher, and AhmetErgin.

Dr. Jitendra Kumar. "SubconjunctivalHaemorhage: Its Etiologies,Risk Factors and Demography in Bundelkhand Region..".” IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 10, 2018, pp18-22.