



A STUDY ON SUBCONJUNCTIVAL HEMORRHAGE CASES ATTENDING OPHTHALMOLOGY OUTPATIENT DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL IN JHARKHAND

Madhurima Prasad	Senior Resident, Department of Surgery, Lady Hardinge Medical College, New Delhi
Anuj Kumar Pathak*	Junior Resident, Department of Ophthalmology, RIO, RIMS, Ranchi, Jharkhand *Corresponding author
Vishakha Gupta	Junior Resident, Department of Ophthalmology, RIO, RIMS, Ranchi, Jharkhand
Rajiv Kumar Gupta	Professor, Department of Ophthalmology, RIO, RIMS, Ranchi

ABSTRACT **Objective:** To determine the demographic pattern, etiology and conditions associated with subconjunctival hemorrhage (SCH).

Material and method: This was a prospective, observational and non-interventional study conducted in patients attending ophthalmology department of a tertiary care teaching hospital. All patients with symptoms consistent with the diagnosis of SCH were clinically evaluated and comprehensive ocular and systemic examinations were performed. Data was documented in a predefined proforma and statistical analysis was done with the help Microsoft excel and expressed in descriptive statistics and percentage. **Results:** Total 73 patients with SCH were analyzed. Male: female ratio was 1.35:1 with female 42.46%. Mean age of the patients were 35.7(±17.2) years. Traumatic cases outnumbered spontaneous SCH. Traumatic was commonly due to blunt trauma and in some cases due to finger nail trauma. Spontaneous SCH was caused mainly by systemic hypertension (53.26%) followed by idiopathic and raised intra abdominal pressure like sneezing, violent coughing etc.

Conclusion: SCH is a common entity in general ophthalmology practice. Various systemic and traumatic etiology and anticoagulant therapy result in acute red eyes. It is a benign condition and patient should be assured regarding the condition as in most of the cases it is self resolving and no specific treatment is needed. In recurrent cases systemic cause should be treated.

KEYWORDS : Etiology, Subconjunctival hemorrhage, Spontaneous, Trauma.

Introduction

Subconjunctival hemorrhage (SCH) is a benign condition of the eye, encountered very frequently in the OPD and presents as acute, painless, red eyes. It characteristically appears as a sharply circumscribed bleeding underneath the conjunctiva without any discharge or inflammation in contiguous areas. Histologically, there is hemorrhage between the conjunctiva and episclera, resulting from breaks of subconjunctival blood vessels and the blood elements leaking in the substantia propria of the conjunctiva. Trauma and contact lens usage are the major risk factors in younger patients, whereas among the elderly, diabetes, systemic hypertension, bleeding disorders, systemic and ocular malignancies, and drug side effects are common.

Studies to ascertain etiology of SCH revealed that in almost 50% of the cases cause remain unidentified and in others, local trauma, acute conjunctivitis, systemic hypertension, diabetes mellitus were the main causes or associated conditions of SCH. Also, in many of the cases it is impossible and impractical to define the exact cause of SCH. Therefore the ophthalmologists must have a proper scheme to identify and classify the cause of SCH in terms of local ocular cause and systemic conditions. In recent years the causes of SCH have shifted and the use of contact lenses, intravitreal injections, ocular surgery have become more common cause than acute hemorrhagic conjunctivitis^{1,9}.

Thus SCH is a very common but agonizing condition encountered by ophthalmologist, a general practitioner, or a physician in their daily practice and finally referred to the ophthalmologists. The main aim should be to determine the cause wherever possible. In most cases, SCH is a self limited condition, blood gradually changes colour and gets absorbed in 1-3 weeks, without treatment³. Use of aspirin and non steroidal anti-inflammatory Drugs (NSAIDs) should be avoided. Artificial tears, four to six times a day are given for mild ocular irritation.

Though SCH is a very common phenomenon, very few studies have been done on this unsightly and trivial condition. This study was conducted with the aim to study the demographic pattern, etiology,

location and associated condition in the patients with SCH. Very limited numbers of studies have been conducted to study this important clinical entity in this part of Jharkhand.

Material and method

This was a prospective and observational study conducted in ophthalmology out-patient department of a tertiary care teaching hospital in Ranchi, Jharkhand from June 2016 to March 2017. The study was conducted under the aegis of declaration of Helsinki. Institutional Ethics Committee approval was obtained before initiating the study. The data was collected from consecutive patients who attended the OPD during the study period and were diagnosed with subconjunctival hemorrhage by the ophthalmologists and had given the consent to provide the information. Demographic and prescription details were documented in the preformed proforma. Wherever possible, with the permission of patient, the photograph of the lesion and prescription were taken with the help of smart phone camera.

Exclusion Criteria: Patients with other ocular co-morbidity with possible diagnosis of red eyes other than SCH, patients undergoing cataract surgery, and indoor patients were excluded from the study. Patient with recurrent SCH were also excluded from the study.

The diagnosis of SCH was confirmed with torch light and slit lamp examination and fundoscopy. Proper medical and ocular history of the patient was taken with regard to presence of any systemic illness, diabetes, hypertension, cardiovascular disease or any bleeding diathesis, medications (e.g., aspirin, warfarin), eye rubbing, sneezing, heavy lifting, trauma etc. On the basis etiology, SCH were classified in two groups; spontaneous and traumatic. Spontaneous SCH was defined as any SCH not related to trauma. Traumatic SCH was defined as SCH resulting from trauma. Bulbar conjunctiva was divided into 4 quadrants as superior(S), nasal(N), inferior(I), temporal(T) and location of the SCH was noted for each patient. All the data were analyzed by Microsoft excel and expressed in descriptive statistics and percentage. Chi-square test was used to analyze the data where appropriate and values with $P < 0.05$ were considered statistically significant.

Result

In this study, after meeting the inclusion and exclusion criteria, seventy three eyes of 73 patients were included. Of them 42(57.53%) were male and 31(42.46%) were female. Male to female ratio was 1.35(Fig 1). Ages of these patients were in the range of 2 months to 81 years with mean age of 35.7 (± 17.2) years.

Etiology of SCH was traumatic in 39(53.42%) and spontaneous in 34(46.57%) cases. Traumatic SCH was more common in males 29(69.04%) and spontaneous was more common in females 20(64.51%)(Fig2). The value was statistically significant ($p < 0.05$)

Hypertension (53%) was the most common association with spontaneous SCH followed by idiopathic or insidious (29%). Sneezing and violent coughing with vomiting together constitute 18% of cases. Average age of the patient in this group was 39.24, with range of 17-68 years. Traumatic SCH was presented in younger age group patients ranging from 2 month old child to 73 year old man. Average age of the patient in this group was 19.73 years. Blunt trauma was most common mode of injuries in all age group. Finger nail trauma was also a mode of injury in earlier age group patients. Most of the traumatic SCH patients had associated findings of blunt trauma e.g. periorbital lacerations, eyelid oedema, chemosis etc.

There was no difference in involvement of eyes in either of the spontaneous and traumatic SCH cases and the difference was not significant statistically ($p > 0.05$).

Traumatic SCH was more common in temporal region(77%) while spontaneous SCH had no fixed pattern and distributed almost equally ($p > 0.05$) in all the quadrants. SCH was present in more than two quadrants in 22(30%) cases, in two quadrants in 8(11%) and in only one quadrant in 43(59%) cases.

Discussion

Although subconjunctival hemorrhage is relatively a benign, self limiting condition, it is one of the common presenting complains of the patient presenting to the ophthalmology OPD. Studies relating to the incidence, prevalence and associations with other co morbid conditions are very limited. In this study we observed the demographic parameters of patients, location and other factors associated with the occurrence of SCH¹.

In this study, SCH was found to be more common in male with male: female ratio was 1.51 while in a study conducted by Nedime Sahinoglu-Keskek et al.⁹, the ratio was 0.72 with male outnumbering female. Mean age of the patients in this study was slightly higher than the study mentioned above.

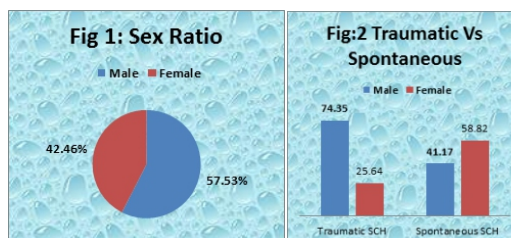
In this study traumatic SCH was present in 52% of cases that was almost equal with the study by Kaimbo et al¹⁰ (51.7%) and much higher than the study by Mimura et al⁴ (8.7%). This may be due to the poor socioeconomic condition of the population as well as due to accidental trauma resulting from industrial and agricultural work of the population. In some cases animal related trauma was also the cause of SCH⁵. Spontaneous SCH were most commonly present in the hypertensive patient. This was also supported by the Pitts JF et al². Some studies have also reported that spontaneous SCH as the initial presentation of a severe systemic disease and infection¹⁰. In our study, spontaneous SCH was more common in older age group while traumatic was more common in younger age group. This finding was also similar to that found in a Taiwanese study where the non traumatic SCH was more common as the age increases and parallels with the incidence of hypertension in higher age group patients also the incidence of spontaneous SCH was higher in female as in our study¹¹.

In our study, traumatic SCH patients were younger than spontaneous SCH patients and also Traumatic SCH was more common in male and Spontaneous SCH was more common in female. This may be due to nature of occupation in males who are more aggressive as compared to females and are involved in field works and industrial works so exposure to trauma is higher in males. These were supported by the study of Nedime Sahinoglu-Keskek et al⁹. Traumatic SCH was more commonly found on temporal part of bulbar conjunctiva in our study followed by inferior bulbar conjunctiva; this was also accepted in the study by Mimura et al^{4,5}. This may be due to protective effect of nose for the nasal area and larger size of exposed temporal bulbar conjunctiva. Spontaneous SCH however had no such specific distribution (P

value >0.05). Blunt trauma was the most common cause of traumatic SCH in our study. Finger nail trauma and forceps delivery resulting in SCH was also seen in small number of patients. In contrast to our study, some study also mentions the drug therapy as a cause of spontaneous SCH, which was not found in our study¹²⁻¹⁶.

CONCLUSION

Subconjunctival haemorrhage is a condition commonly encountered by ophthalmologist, a general practitioner, or a physician as an acute red eye in daily clinical practice. It is a benign condition with various etiologies. Traumatic SCH are present on specific locations on bulbar conjunctiva while spontaneous SCH can be found anywhere in the bulbar conjunctiva. Systemic factors such as hypertension and bleeding disorders are most common associations of spontaneous SCH. In most cases, SCHs do not require specific treatment and the patient should be reassured that the hemorrhage will disperse in 2-3 weeks, with blood turning from red to brown and then to yellow. Besides this, proper systemic evaluation should be advised in spontaneous SCH.



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