ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 08 | August - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

STUDY THE RISK FACTORS OF SUBCONJUNCTIVAL HAEMORRHAGES

Ophthalmology

Dr. Umeshaben I. Padvi Assistant Professor, Department Of Ophthalmology, Gmers Medical College, Navsari

ABSTRACT

Objective: to determine associated risk factors and prevalence of subconjunctival hemorrhage. **Methodology:** This prospective, observational and non-interventional study involved total of 80 patients with subconjunctival hemorrhage (SCH) with age ranging from newborn to 80 years of age. Age, gender, ocular history and medical history were recorded for all SCH patients. **Results:** The patients with SCH consisted of 27(33.75%) women and 53(66.25%) men. Of the 80 patients, 52(65%) had traumatic and 28 (35%) had spontaneous SCH. Spontaneous SCH was more common in hypertensive (53.5%).**Conclusion:** traumatic SCH was more common than spontaneous SCH. Traumatic SCH was more found in young male, whereas spontaneous was more common in hypertensive patients.

KEYWORDS

red eye, subconjunctival hemorrhage, eye trauma

INTRODUCTION:

A frequent complaint in outpatient clinics and emergency rooms is red eye. Subconjunctival bleeding is quite often the reason. A common benign disorder of the eyes known as subconjunctival hemorrhage (SCH) is characterized by painless, abrupt bleeding in the area between Tenon's capsule and the conjunctiva due to a ruptured artery. It is usually a benign condition that can be brought on by trauma, hypertension, anticoagulant medication, coughing, vomiting, high venous pressure (Valsalva maneuver), and acute hemorrhagic conjunctivitis. [1,2,3]

Subconjunctival hemorrhage can be divided into two categories: traumatic and spontaneous. Local ocular minor trauma, foreign body, vigorous eye rubbing, ocular surgeries, and increased use of contact lenses may cause a traumatic subconjunctival hemorrhage. Ocular surgeries especially in patients on anticoagulant drugs are at increased risk of having subconjunctival hemorrhage.

SCH may occur after orbital wall fractures. Basilar skull fractures can be identified if SCH is coming from the fornix when globe trauma is not present. [4]

SCH is also found in newborns, which can be normal after vaginal delivery. It occurs due to prolonged compression of a newborn's upper abdomen & chest which leads to sudden severe venous congestion. In newborns, uterine contraction during delivery provides compression. [5]

Hypertension and other vascular disorders like diabetes mellitus, and hypertension are the biggest risk factors for spontaneous SCH. It has also been demonstrated that spontaneous SCH is a predictor of hypertension.[6,7] Elevated venous pressure during coughing, vomiting, strenuous exercise or weightlifting, and Valsalva maneuvers are other causes of spontaneous SCH. People on anticoagulants such as warfarin, heparin, or NSAIDs such as aspirin, and clopidogrel are at high risk of SCH. Many diseases may present with SCH as initial presentation & on further evaluation they may be diagnosed as having SJ syndrome, hemochromatosis, telangiectasias, hemangioma, or leukemia. Many cases of SCH are idiopathic.

MATERIALS AND METHOD:

This was prospective, observational & non interventional study. It involved a total of 80 patients with subconjunctival hemorrhage. This study was conducted between January 2021 to December 2021 at tertiary care hospital in west India.

Inclusion Criteria: patients with subconjunctival haemorrhage attending outdoor patient department and patients referred from other departments were included in this study.

Exclusion Criteria: patients with other common causes for red eye like, glaucoma, conjunctivitis, uveitis, blepharitis, dry eye, episcleritis, scleritis and patients with recent history of any recent ocular surgery were excluded from this study.

Informed consent was obtained from all patients or guardians. patient's age, gender, medical history and ocular history were documented. Any history of hypertension, diabetes mellitus, cardiovascular disease, any medications like aspirin, clopidogrel, sneezing, vomiting, heavy lifting, eye rubbing, penetrating or blunt ocular trauma were noted. Ocular examination was done on torch light and slit lamp examination. Patients' visual acuity & dilated fundus examination was done. Patients were classified into two groups: traumatic and spontaneous. SCH without any history of trauma was included in spontaneous. Patients with spontaneous SCH were referred to physicians to screen for any systemic disease & further investigate any existing disease.

Table 1: characteristics of patients with subconjunctival haemorrhage

	Spontaneous	Traumatic	Total
No. of cases	28 (35%)	52 (65%)	80
GENDER			
Male	13 (26.5%)	40 (76.9%)	53 (66.25%)
Female	15 (54.5%)	12 (23.1%)	27 (33.75%)

RESULTS:

Out of total 80 patients with subconjunctival haemorrhage, there were 53 (66.25%) male & 27(33.75%) females. Mean age of male was 34.5 years and mean age of female was 52.1. Table 1 shows characteristics of patients with subconjunctival haemorrhage. Out of 80, 28(35%) patients had spontaneous SCH & 52(65%) had traumatic SCH. Spontaneous SCH was more common in female (54.5%), whereas traumatic SCH was more in male (76.9%).

Out of 28 patients with spontaneous SCH, 11 patients were known case of hypertension and 4 were diagnosed on further systemic evaluation, 3 patients had history of vomiting or profuse coughing, 1 patient was diagnosed as having leukemia on further investigations, whereas 9 had no reason for having subconjunctival haemorrhage. [table 2]

Table 2: associated systemic condition in spontaneous SCH

Associated systemic condition	No. of patients (total – 28)
Hypertension	15 (53.5%)
Diabetes mellitus	0
Leukemia	1 (3.5%)
Vomiting/coughing	3 (10.8%)
Idiopathic	9 (32.2%)

Out of 52 patients having traumatic SCH, 5 were neonates who had SCH due to birth trauma, 12 had history of profuse eye rubbing, whereas 35 patients had history of trauma to eye in any from like, blunt injury to eye with fist, road traffic accident or injury at occupational site (factory, farms,etc.). traumatic SCH was more common in young male, mean age was 19.2 years of age.

DISCUSSION:

in this study on subconjunctival haemorrhage, common conditions associated with SCH, gender distribution of patients with SCH and common causes of SCH were observed.

In this study, among spontaneous hypertension, 15/28 (53.5%) patients

had hypertension, which was similar to Mimura et al[8]. Mimura et al had 47.5% with hypertension and 39.4% with idiopathic subconjunctival hemorrhage. In this study, there were 32.2% patients had idiopathic SCH. In this study, 28/80 (35%) patients had spontaneous hemorrhage, which was similar to Nedime Sahinoglu et al, who conducted study of 50 patients and 16/50 (32%) patients had spontaneous SCH[9]. In this study the frequency of trauma in patients with SCH was higher upto 65%, which was similar to Nedime Sahinoglu et al[9], in which 68% patients had traumatic SCH. Whereas previous studies like Mimura et al reported traumatic SCH as 8.7%[8]. In other study Kaimbo et al found traumatic SCH to be 51.7%[10]. Also traumatic SCH was mor common in young male which was similar to previous studies. It may be due to increased exposure to heavy work and increased risk of trauma.

CONCLUSION:

In this study, it was summarized that, traumatic SCH was more common than spontaneous SCH in this region and young male are at higher risk of having traumatic SCH. Whereas spontaneous SCH is more common in hypertensive patients. Subconjunctival hemorrhages can sometimes be a symptom of a more serious underlying condition, particularly if they are persistent or recurrent. So, patients having SCH must be further evaluated for any systemic diseases.

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