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Epidemiological pattern of ocular trauma (Retrospective study)

Thesis

Submitted for partial fulfillment of the M.sc Degree in Ophthalmology

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Abstract

PURPOSE: To review the epidemiology of serious ocular trauma presenting to Kasr El Aini Hospital, Cairo University.

METHODS: This is a retrospective epidemiological study of ocular trauma patients admitted to Kasr El Aini hospital during a one-year period (2008). Cases were analyzed with respect to: (1) demographics, (2) time, place, activity during trauma and cause of trauma, (3) examination finding.

RESULTS: five hundred and ten patients (five bilateral injuries) sustaining serious ocular injury requiring hospitalization were included during the study period. 65.5% of ocular trauma occurred in men ($P < 0.001$ chi-square test) with an average age of 23 years (ranging from 2 months to 65 years). There were 415 (81.3%) open globe injuries and 95 (18.7%) closed globe injuries. In open globe injuries, it is shown that 40% had corneal wound, 6.6% had limbal wound, 24% had scleral wound, 27.8% had corneoscleral wound, 37% had iris prolapse, 20.5% had traumatic hyphema, 29.4% had traumatic cataract, 9.8% had IOFB.

CONCLUSION: The majority of ocular trauma in our population was due to violence related injuries occurring mainly in males.

Key Words:

Mechanical eye trauma, Non mechanical eye trauma, Standardized classification of ocular trauma, Frequency, consequence of ocular trauma

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List of abbreviations

A.C	**Anterior Chamber**
(Ca [OH] ^{2}	**Lime(calcium hydroxide)**
C.B	**Ciliary body**
CF	**Counting finger**
CME	**Cystoid macular edema**
CT	**Computed tomography**
DM	**Descemets membrane**
ER	**Emergency room**
EPD	**Eye protective device**
FTMH	**Full thickness macular hole**
(HCl)	**Hydrochloric**
(HF)	**Hydrofluoric**
HM	**Hand movement**
(H_2SO_3)	**Sulfurous**
(H_2SO_4)	**Sulfuric**
(KOH)	**Potassium hydroxide**
IOFBs	**Intraocular foreign bodies**
IOP	**Intraocular pressure**
P value	**Probability value**
PH	**Potential of hydrogen**
P.K	**Penetrating keratoplasty**
PL	**Perception of light**

PVR	**Proliferative viteroretinopathy**
$Mg[OH]^{2}$	**Magnesium hydroxide**
mmHg	**Millimeters of mercury**
MVCs	**Motor vehicle cars**
MRI	**Magnetic resonance imaging**
(NH_3)	**Ammonia**
Nd:YAG	**Neodymium :yttrium aluminum garnet**
RAPD	**Relative afferent pupillary defect**
RBCs	**Red blood cells**
RD	**Retinal detachment**
RPE	**Retinal pigment epithelium**
TON	**Traumatic optic neuropathy**
U.V energy	**Ultraviolet energy**

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Content

Introduction:

Worldwide interest in the field of ocular trauma is rapidly growing as increasingly effective techniques for prevention and treatment are developed.Ocular trauma are often disabling and create enormous costs to both the victim and society. Ocular trauma is a major cause of monocular blindness and visual impairment throughout the world, although little is known about its epidemiology or associated visual outcome in developing countries **(Smith and Gole, 2006)**.

Although the eyes represent only 0.1% of the total body surface and only 0.27% of the anterior body surface their significance to individuals and society is disproportionally higher. Luccheta (2001) reported that, the eyes are in third place, after hands and feet, among the most frequently involved anatomical region. Consequently, the socioeconomic impact of ocular trauma can hardly be overestimated. Those affected often have to face loss of career opportunities, major lifestyle changes, and occasionally Permanent physical disfigurement **(Luccheta, 2001).**

Data collection is the initial step in any epidemiological study. Once a sufficient amount of information is available on how injuries occur (to whom, how, where, when, etc), prophylactic measures can be planned and implemented. The continued collection in a standardized fashion of epidemiological information helps to determine whether a certain preventive measure was effective or not **(Kuhn et al, 2002).**

Aim of work:

- Define population at risk.
- Identify activity at time of trauma, causes, and types of trauma.
- Identify the extent of ocular trauma.

The lack of a common language has always been an obstacle in effectively sharing eye injuries information. For instance, varying responses are given to simple question as; what is the distinction between laceration, rupture, penetration and perforation? .By always using the entire globe as the tissue of reference, the classification of ocular trauma is clear, consistent, and simple. It provides definitions for the commonly used eye trauma terms within the framework of a comprehensive system **(Kuhn et al, 2002)**.

Despite a growing interest in eye injuries, the absence of a common language continues to impede both clinical care and research. Ocular trauma is a global health problem .It is defined as a result of mechanical or non mechanical injury to the eye **(Morris et al, 2003).**

*Mechanical eye trauma:

1) Conjunctival injuries:

•*Subconjunctival Hemorrhage:*

It appears as a bright red patch of conjunctival tissue with distinct or feathered borders, fig (1). If severe, the conjunctiva may prolapse through the palpebral fissure; the entire bulbar conjunctiva may be involved, fig (2). Generally resolving spontaneously in 7 to 10 days, its color evolves from bright red to yellow green. Occasionally, when the hemorrhage involves the perilimbal conjunctiva, blood breakdown products can be seen in the anterior peripheral corneal stroma as a greenish discoloration. The management of a traumatic subconjunctival hemorrhage must be ensured that the hemorrhage does not indicate or conceal a deeper or more extensive injury **(Lee and Naor, 2003)**.

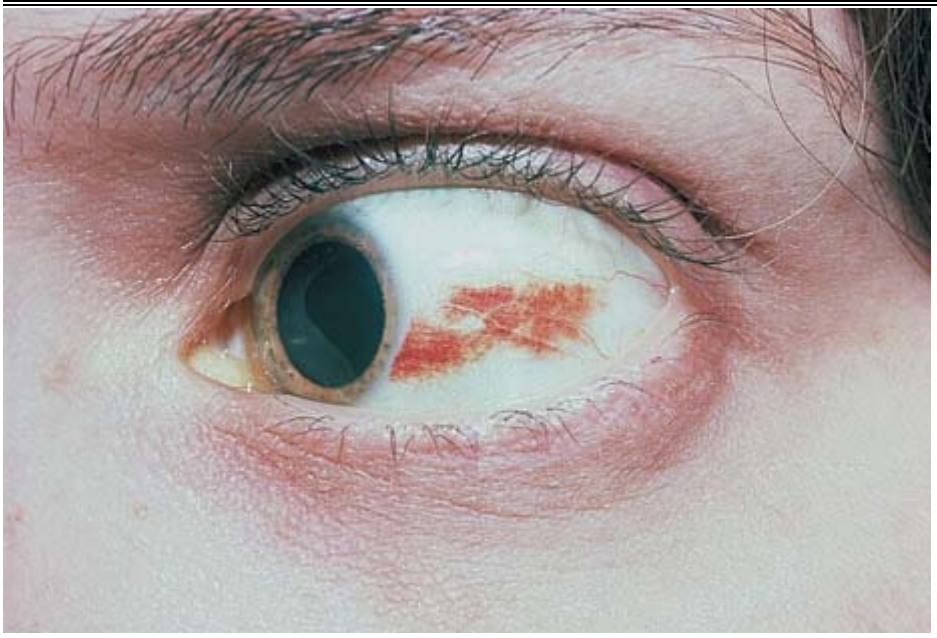

fig. (1): subconjunctival hemorrhage **(Lee and Naor, 2003)**.

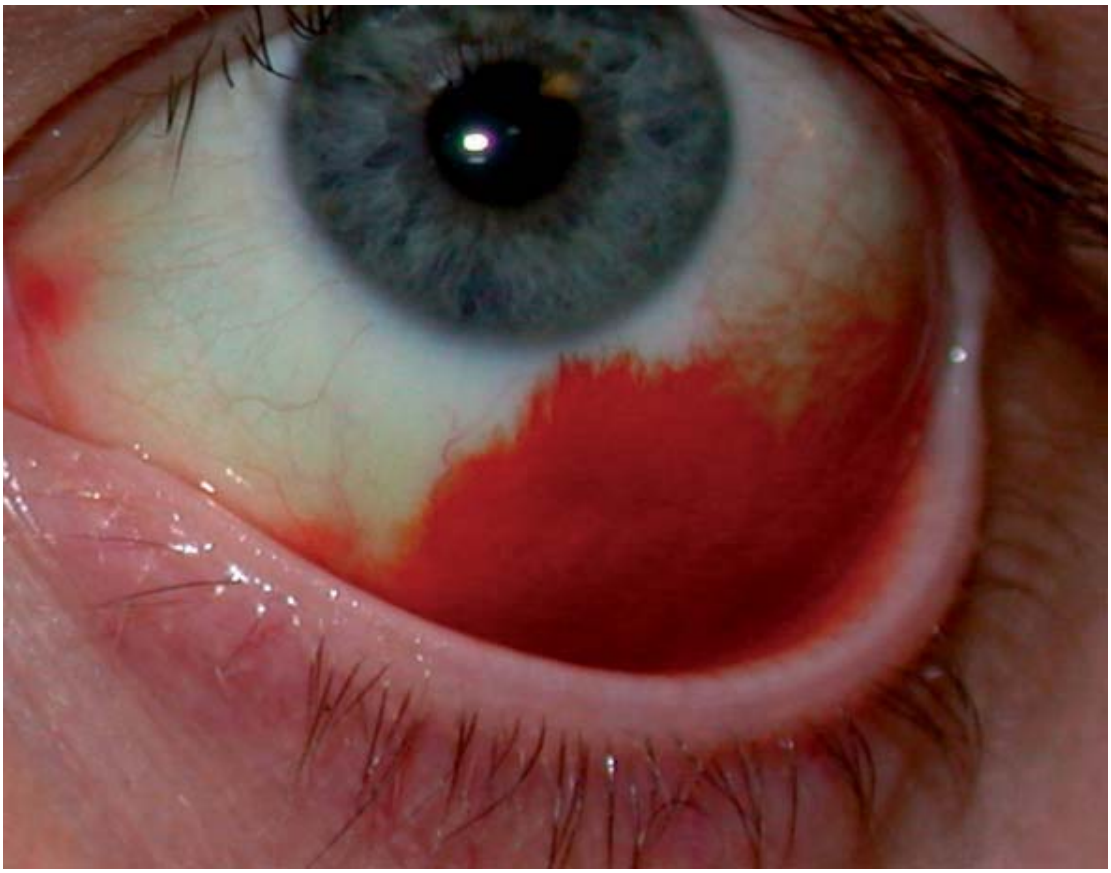

fig. (2): Extensive subconjunctival hemorrhage **(Lee and Naor, 2003)**