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LETTER TO THE EDITOR

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Medico Legal Aspects of Ocular Trauma

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Basic nature of eye injuries is either accidental (work related or not), or inflicted ones, so they are always associated with legal problems. Many such cases may end up in civil court or in criminal court. Therefore, healthcare providers must integrate a forensic assessment into their practice while considering proper evidence interpretation and documentation techniques, as they can have a sig-nificant impact on the legal outcomes of those forensic cases. Nowadays there is still a strong sepa-ration (in Portugal at least) between law enforcement and healthcare. The need for education with-in the healthcare system, regarding the impact that nurses and doctors can have within the justice system, is warrant. The accurate description, interpretation and documentation of injuries is one of the most important functions of the forensic physician, which ensures that patients get every op-portunity to maximize both their healthcare and legal outcomes.

Medico legal duties start right at the first clinical examination. How the injury was sustained gives clues about what to look for during the examination. If there is a history of any high velocity injury (particularly a hammer and chisel injury) or if glass was involved, a penetrating injury must be strongly suspected and excluded. If there has been a forceful blunt injury (such as a punch), signs of a "blowout" fracture should be sought. The injury circumstances must be carefully rec-orded paying particular attention in children cases as an accurate and reliable history may not be possible. It is vital to test the visual acuity, both to establish a baseline value and to alert the exam-iner to the possibility of further problems. It is mandatory to take note of the type, location, direc-tion, dimensions and presence or absence of foreign bodies in the wound. Measurements should be accurate (as far as possible) and whenever possible take photographs or draw simple sketches of the injury. Be aware of the words. Make sure they are very precise. Terms like "about", "nearly", "looks like", "approximately" must be always avoided. Before doing any procedure, an informed written consent has to be signed by both doctor and patient. Consent has to be obtained from con-scious, mentally sound adults, or from the child's parent (in case the child is less than 18 years old). Consent is not necessary if the patient is in coma and need emergency treatment.

Eye injuries (work related or not) can be generally divided into three major categories: open globe injuries (from a sharp object), closed globe injuries (from a blunt object) and chemical injuries. In workplaces, the type of lesion´s frequency strongly depends on the kind of work made, whilst in the domestic setting (in our practice), blunt trauma is the most frequent. Falls and traffic

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accidents are more prevalent, but assaults are also an important cause.

On-the-job eye injuries are a major cause of socioeconomic damage, morbidity and disability. Alt-hough the majority are in the range of minor cases, they are globally associated with direct cost of medical care and indirect costs such as time off work, loss of income, long-term disability and workmen compensation claims. Therefore, the implementation of effective safety strategies has to go beyond the use of safety googles.

Ophthalmic injuries may involve the eyeball or perioc-ular structures. Additionally, central nerve system/visual pathways lesions can also be considered trauma´s visual sequels. Central nerve system trauma generally results in scotomas or visual field defects, without any evidence of bulbar or periocular trauma, so ancillary exams like CT scan or visual field are crucial for defining the extension of the sequel.

Eyelids can be injured by any of the previous defined three major trauma categories and may lead to lesions such as ecchymosis or hematomas, lacerations with or without lacrimal system involvement. It is always important to restore the anatomy the best possible way, once it may have implications on patient's complaints and their visual function. The achievement of best visual acuity must be considered after being corrected with glasses or contact lens, but also with prism if diplopia is present, or sun protecting glasses for minimizing photophobia in certain cases. Another important point to take in consideration is a tolerable anisometropia

Eyeball injuries occurring in different settings, also through the three defined major trauma categories, can lead to minor lesions or irremediable ones that may cause blindness. Fortunately, nowadays clinicians have better tools and more knowledge on how to minimize the harmful consequences.

The bones around the eye can also be broken, either isolated or as a result of multiple injuries. The orbital bones can suffer fractures by direct blunt trauma, usually malar, zygomatic or frontal bones, or as blow-out fractures, usually floor or medial orbital wall. In the latter cases, treatment isn't always necessary once some fractures can spontaneously consolidate. Muscles or soft tissues may not be entrapped in the fractures, otherwise they need prompt surgery to restore anatomy and prevent long-term complications.

It is highly recommended to restore the best anatomical and functional capacities before defining an incapacity, either through medication, surgery, prosthesis, glasses or laser treatment. One should be very attentive to determine the lesions consolidation time and stabilization. Legal implications associated with trauma/sequels vary depending on the underlying legal environment. It can be evaluated in terms of civil or working rights. The same sequel can have different valuation for the job or for everyday life. The most important aspect being considered in an ocular injury is the visual function. Aesthetic issues are usually being set aside, unless it is a major issue for people´s work, like a movie star or a model. Far visual acuity, near visual acuity and visual field defects may be all part of the same injury, therefore the expert must not overestimate the lesion.

Before any other consideration about a trauma-sequel, the connection between those two aspects has to be established. Various guidelines as well as personal experience and medical training can help medical judgement as to whether or not a specific ophthalmic problem was, indeed, the result of a described trauma. To achieve conclusions, it is relevant to find out exactly what happened and its consequences, as well as the treatment that was established. Again, it is fundamental to build up the best accurate description of the initial evaluation, but also in all the others on the way. Thereafter, ophthalmologists must have the skills to interpret trauma mechanism and correlate it with the lesions that they are seeing.

Guidelines to the assessment of permanent impairment degree are an essential instrument to quantify the disability unanimously. The more objective and descriptive they are, less variation is allowed between clinicians. Consequently, it is extremely important for ophthalmologists to be in a constant update in their knowledges and practice in what is newer, in order to make the best decision. In addition, they should know the applicable laws. Only that way they could promote proper management of forensic cases.

Practitioners also must be specialized in these particular problems. Only then they can become experienced and well trained in trauma evaluation, sequels and impairment. Multidisciplinary teams are sometimes useful to access more complex cases.