AIRBAG EXPLOSION CORNEAL INJURY

Alina Brinza, MD[1], Angela Corduneanu, Ass.prof.[1,2], Eugeniu Bendelic, Prof.[2], Maria Iacubitchii, univ.asis., PhD student [2]
[1]*Republican Clinical Hospital "Timofei Mosneaga", Chisinau, Republic of Moldova*
[2]*Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova*

Introduction: Airbag burst ocular injury is a type of explosion injury that is rarely reported in the literature. These types of injuries though rare can affect the eyes, head and other parts of the body. It can also occur spontaneously, even with non-contact, purely as accidents, even to bystanders. (Murty, O.M. 2009) Eye injury is caused by the pressure impact of the explosion or by direct hit of the rim of the airbag, but also can occur as a result of alkaline burn due to the chemical components of the inflation reaction.
Purpose: We report a case of corneal lesions due to an explosion during repairing an old airbag.
Case report: A 24-year-old male patient, presented with diminution of vision in both eyes, pain, redness of five hours duration following airbag explosion bilateral ocular injury. This injury happened while he was repairing an old defective airbag in his yard. Initial ocular examination revealed: VA OD/OS = 0.3/0.3, lid edema, multiple black fragments on and within the cornea and conjunctiva of both eyes, corneal abrasion, extended focal white porcelain-like opacity and corneal edema. The ocular irrigation was performed and the foreign bodies were removed. On the fourth day the corneal opacity diminished and anterior-segment ocular coherence tomography (AS-OCT) revealed epithelial layer disruption, corneal thickening, focal hyperreflective stromal material. The patient was managed conservatively. Over the course of 5 months, the visual acuity became OD/OS = 0.8/1.0 despite the corneal vascularization. The follow-up of the patient continues.
Discussion: Worldwide, there are a lot of cases of ocular injuries due to airbag deployment, but few of them are due to airbag explosion. The incidence is higher in males usually younger than 40 years, likely due to higher occupational exposure. The mechanism of the eye injuries are due to the overpressure airwave, the fragments and parts of the surrounding environment (metal, glass, wood, plant particles, sand, etc) accelerated by the explosion. (Žiak,P., Mojžiš P., 2017). Such lesions as white porcelain-like corneal opacity related to explosion injury, wich is present in our patient, were not reported in the literature.
Conclusion: This case emphasizes on the importance of serial monitoring of cornea status and recommendations of the common protective measure during working.