

Evaluation of the Relationship Between the Pattern of Midfacial Fractures and Amaurosis in Patients With Facial Trauma

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Purpose: To evaluate the relation between patterns and numbers of midfacial bone fracture patterns and amaurosis in traumatized patients.

Materials and Methods: This is a cross-sectional study of traumatized patients with midfacial fractures who presented to Shahid Rajaei and Chamran hospitals (Shiraz, Iran) from 2010 through 2011. The predictor variable was midfacial fractures and the outcome variable was amaurosis. $P < .05$ was considered statistically significant.

Results: The study was composed of 112 subjects. Prevalence of amaurosis was 6.25% (7 of 112). Le Fort III fracture was the only fracture pattern that had a significant association with amaurosis ($P = .004$). Nasoorbitoethmoid fracture was the second most correlative pattern, although this relation was not statistically significant.

Conclusions: This study showed a meaningful relation between Le Fort III fractures and amaurosis in patients with facial trauma. There was also a high prevalence of nasoorbitoethmoid fracture in blinded patients.

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Facial trauma can cause various maxillofacial complications that vary from simple skin abrasions to considerable long-term functional and esthetic defects,¹ such as orbital injury, which is one of the most important complications after facial trauma. Moreover, fractures

that have occurred in specific locations, such as the orbit, can increase the risk of ocular or optic nerve injuries. The importance of early diagnosis of optic canal fractures and optic nerve injury has been emphasized in numerous studies, especially when there are definitive signs, such as retrobulbar hemorrhage or increased intraocular pressure, after facial trauma or operative interventions.²⁻⁴

Although several factors protect the eye against trauma, such as the orbital rim, blinking, elasticity of ocular structures, and eye protection by the hands or head rotation, facial fractures may place patients at risk for ocular injuries. The prevalence of ocular injuries associated with facial fractures has been widely reported to be 2.7% to 90.6%.^{5,6} Fractures of the facial middle third comprise 95% of severe ocular injuries, and other fractures (5%) are related to the facial upper third.

The main cause of ocular injuries is damage to the globe, optic nerve, or visual pathway, such as retrobulbar bleeding and perineural edema, that cause nerve compression and may lead to optic nerve injury (ischemic optic neuropathy); vascular spasm and thrombocytosis are 2 additional causes.⁷ In addition,

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