

Abstract

Evaluation of bedside ocular ultrasound findings in multiple trauma patients with head and facial trauma

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Background Trauma to the eye accounts for approximately 3% of all emergency department visits in developed countries. It has been estimated that worldwide ocular injuries are responsible for blindness or visual impairment in large part of all patients who present to an eye department. Ocular injuries are usually associated with injuries to head and neck or limb structures. Missed ocular injuries in multitrauma patients may lead to serious morbidity later on, necessitating the need of high index of suspicion and employment of appropriate imaging techniques to accurately define the extent and type of ocular injury. Ocular sonography is useful to diagnose injuries include: hyphema ,vitreous hemorrhage, retinal detachment, dislocation of lens,intraocular foreign bodies and globe rupture.

This study was performed to evaluate findings of ocular sonography in patients with head and facial trauma and compare results with orbital CT scan and ophthalmologist examination.

Material and methodsIt is a cross sectional descriptive analytic study on 130 patients with multi trauma and head and facial injury in emergency department of Imam Reza hospital. The questionnaires have been completed based on history, physical examination , ultrasonography, reports of orbital CT scan and ophthalmologist consults.

ResultsThe mean age of 130 patients (75/4% men , 24/6% female) was 35/31±17/94 years old.21 patients (16/2%) had GCS ≤ 8 , 35 (26/9 %) patients 9-13 and 74 (56/9%) patients 14 and 15.The most common cause of trauma was car

accident (39/2%) and motorcycle events (27/7 %). Clinical findings were eyelid laceration (57 patients) , eyelid and periorbitaledem and ecchymosis (63,113 patients) and suspected globe distortion in 6 patients .Ocular pathology were found in sonography include: hyphema in 31 eyes , forgein body (2) , vitreous hemorrhage (19) , retinal detachment (10) , lens dislocation (13) and globe rupture in 4 eyes. Ultrasound was able to detect the retinal detachment and lens dislocation with high accuracy (sensivity 90 , 85 % and specificity 99%) and CT scan showed higher accuracy compared to ultrasound in detecting forgein bodies.

There was significant statistical relation between level of consciousness and severity of ocular pathology (PV = 0/000).

Discussion. Ultrasound may be used in pateints cannot cooperate with a fundoscopic examination or when sever edema , chemise , or hyphema are present in emergency department . It can be recommended ocular sonography in trauma patients with loss of consciousness useful to earlydiagnose of ocular pathologies and need for emergency intervention.

Key words ocularsonography , trauma , emergency medicine