

Pattern of Patients' Presentation with Ocular Emergencies in Maritime Environment

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Background: There is comparatively little literature on the epidemiology and management of injury and illness at sea, an environment which is austere, distant from definitive medical care, and defined by highly variable but generally limited on site medical resources. Threats to life, limb, and sight carry a significant personal and economic cost in the workers in tens of thousands of ships. We sought to characterize ocular illnesses and injuries on commercial vessels.

Methods: This is a retrospective chart review among adult patients evaluating the incidence and types of ocular injuries and illnesses occurring on the vessels. The charts were from a maritime telemedicine practice that provides care and medical direction to a variety of vessels worldwide. Data were extracted from October 2018 through September 2019. Charts were evaluated by emergency physicians who collected data.

Results: We enrolled 803 patients, of which 31 (3.8%) were for primary ocular complaints. 32.3% were for traumatic eye injuries, including blunt trauma, corneal foreign body, chemical exposure, and electrical arc exposure. Protection was definitively worn in 10% of trauma cases, definitively not worn in 10% of trauma cases, and eye protection status was unknown for the remaining 80% of trauma cases. Among the 21 non-traumatic cases, the most common diagnoses were conjunctivitis (n=5), Hordeolum (n=4), and Chalazion (N=2). Definitive diagnoses could not be made via telemedical consultation in 47.6 % of non traumatic cases, however serious sight threatening diagnoses including vitreous hemorrhage (n=2), retinal detachment (n=1), and central retinal artery occlusion (n=1) were presumed in 14.2% of non-traumatic cases. Vessels were at anchor or in port during 6 of the service calls and at sea during 17 of the service calls. The vessels at sea at the time of injury or illness had an average time-to-next-port of 6.8 days (Range 2-30 days). Compared to non-traumatic illness, traumatic injuries were more likely to require in-port ophthalmology or emergency consultation (70% vs 28.6%) and more likely to be declared unfit for duty after evaluation (20% vs. 14%). A total of 3/31 patients required ship diversion or evacuation.

Conclusion: The majority of ocular illnesses and injuries can be managed in maritime environment, without diversion or evacuation. Traumatic Injuries are more likely to require on-shore specialty evaluation than medical illnesses. Although infrequently required, diversions are expensive and more research is needed on injury reduction to reduce the need for diversion, evacuation, and on-shore evaluation.