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OTORHINOLARYNGOLOGIST ON THE FRONT LINE: DEALING BATTLE TRAUMA DURING DEPLOYMENT

Otorhinolarngology

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ABSTRACT

The role of otorhinolaryngologist during emergencies has been well known in collaboration with anaesthesiologist doctor in handling head neck trauma. Sharing knowledge, experiences, and expectation is essential in order to facilitate decision-making and adequate management in emergency cases. Emergency preparedness is an ongoing process in which leadership, commitment, action, funding, and partnerships at all levels must be sustained.

KEYWORDS

Otorhinolaryngologist, battle trauma, penetrating neck injuries, deployment

INTRODUCTION

Emergencies and natural disasters stress a healthcare system and lead to challenges in protecting patients' and providers' welfare[1]. Hospitals and other healthcare systems need to protect patients, employees, and physical resources during such events while continuing to provide care to those in need. Now a days, modern high energy fragmentation devices often inflict complex head and neck injuries, Which needs prompt interventions from otorhinolaryngologist to stabilise patients and secure airway. With technological improvements in body armour and increasing use of improvised explosive devices, it is the injuries to head, face and neck (HFN), which are the cause for maximum fatalities[2].

Insurgents and terrorists specifically target the major means of human communication, including the ears and the nasopharyngeal complex. Many attacks attempt to maximize noise, because a deafening blast disorients and confuses, as well as injures. Bombs aimed at soldiers are meant to kill, but if they fail to kill, they are intended to cause maximum panic, pain, and disfigurement. IEDs (Improvised explosive devices) cause a disproportionate number of ear, nose, and throat injuries, because the shrapnel tends to spray upwards. So Otorhinolaryngology becomes a crucial sub-specialty in the care of the injured[2].

In this article, we will discuss the injuries that are of highest concern to an otorhinolaryngologist, and plan of management.

There are various maxillofacial trauma including facial lacerations, facial fracture, facial burns, laryngotracheal injury including penetrating trauma, contusions, nose trauma, ear trauma that needs urgent interventions from otorhinolarngologist .

Mechanism Of Injuries:

Penetrating missile trauma can be a low-velocity injury or a high-velocity injury. The wounding capacity of a missile is directly proportional to its velocity. However, the amount of energy exchanged to tissues is more important than the projectile's velocity. The energy exchanged to tissues depends on many factors including: projectile design, velocity, mass and flight, the distance to the target, the tissues hit and the protective barriers.

Blast injuries are frequently multiple and in addition to injuries from projectiles, casualties often have blast, burn and blunt trauma wounds. These injuries, therefore, do not lend themselves to early definitive treatment. In contrast, low energy exchange wounds, if adequately cleaned and superficial, can be successfully treated early [3].

The modern initial management of ballistic injuries depends on two key factors. Firstly, the surgeon must analyse the mechanism and amount of energy exchanged to the injured tissues. Secondly, treatment of facial injuries must be undertaken in the context of the overall number and severity of injuries sustained by the patient. Based on this analysis the management is planned[2].

Plan Development

When developing the rescue surgical plan, key stakeholders from both the surgical department (otorhinolaryngologist and maxillofacial surgeon) and anaesthesia departments should be involved in collaboration with the committee responsible for hospital incident command[4]. Additional personnel to be included are technicians, pharmacy staff, central sterile processing staff, administration, blood bank, PACU (post anesthesia care unit) staff, respiratory therapy, pathology, interventional radiologists, hospital security/law enforcement, and bed flow coordinators.

Risk Assessment

This is the first step in emergency planning for the particular practice. The “all hazards” approach is used by a variety of organizations including the World Health Organization and the United States Federal Emergency Management Agency (FEMA) [5,6]. It is also the approach recommended by The Joint Commission for healthcare organizations in emergency planning [7].

In an “all hazards” approach the practice attempts to identify all emergencies which could occur at the facility and in the community in which the facility is located. This process should include consideration of the general geographical area and the practice's specific location in the community. It should also consider the patient and staff population typically present at the facility including consideration for children, the elderly, or patients with disabilities [8]. Once all possible emergencies are identified they are evaluated for the likelihood that they would occur.

Communication Strategy

Communication strategy is usually developed as a part of disaster planning of hospital. A surgical surge plan should be coordinated with this overall plan and include notifications of the OR(Operating Room) and all impacted personnel (ie, blood bank, nursing, bed board) that an event is unfolding that will heavily involve the OR and all surgery-elated resources. This strategy should be applicable at any time of day and any day of the week as OR utilization frequently varies depending on these factors[4].

Plan Coordination And Rehearsal

The surgical surge plan should be coordinated and integrated with all the components of the hospital emergency plan and must be rehearsed along with other disaster emergency components. Drills should also incorporate the time constraints of a given operation including tying up the room and staff and using instruments and disposables.

Dealing With Head Neck Trauma And Injuries

In the majority of HFN injuries the primary cause of death is secondary to airway compromise and with the exception of severe neck wounds haemorrhage is an unusual cause of death. The ability to perform an emergency cricothyroidotomy is a necessity for deployed medics, but is a temporary procedure and a tracheostomy needs to be performed when the necessary skill becomes available. Patients exposed to IEDs must be assessed for burn-related injuries, and a low threshold for endotracheal intubation or tracheostomy is indicated[2].

Colour coding can be assigned according to the nature of urgency of airway requirement, red for emergent airways, yellow for delayed airways and green for elective airways. Thus airway management can be streamlined and no time is lost in decision making.

CONCLUSION:

The intend of this article was to describe the distribution of wounds, mechanism of injuries in head neck region, plan of management for deploying an otorhinolaryngologist in military actions. Military planners needs to recognise this, and in future they should consider deploying otorhinolaryngologist, maxillofacial surgeon, along with anesthesiologist in dealing battle trauma.

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