



AN OVERVIEW OF THE ROLES OF NURSES, RADIOLOGY TEAM, PARAMEDICS AND DENTISTS IN APPROACHING FACIAL TRAUMA

Mohammad Sayel hamad Alshammari^{1*}, Awad Falah Awad Alsulami², Ibrahim Abdullha Mohammed Alayli², Nasser Eid Saad Alotaibi³, Atallah Murshid Al-Budhaili⁴, Mostafa Mohammed Alhasany⁵, Majad Abdulaziz Falah Almuhamyimi⁶, Amal Saleh Alhiani⁷, Eman Omair Alotaibi⁷, Etethar Ali Alnassar⁸, Rana Abdullah Alsarhan⁹, Abdullah Ibrahim A Alreshoodi¹⁰, Ayedh Sultan Mohammed Alqahtany¹¹, Fadi Salem Hashim Alzahrani¹², Abdullah Mohammed Alsayed¹³

Abstract:

In the course of a typical day, it is not unusual for people to sustain face and dental injuries, particularly in the aftermath of a disaster. The purpose of this review is to discuss the suggestions for the role of nurses, paramedics, and radiology teams in catastrophe situations, as well as the Israeli experience in dealing with oral, dental, and facial injuries that occurred during wars and terrorist acts. It is also reported that there are principles for the prevention of certain injuries and primary care for them. It is highly recommended that dental and medical teams have training and preparation in order to be able to participate in medical emergency management during disaster situations. Health care providers and physicians should be knowledgeable in the treatment of oral, dental, and facial injuries. Dentists, nurses, and members of the radiology team, as well as paramedics, should be prepared to play a part in disaster preparedness. Enhanced treatment and management of catastrophic events will result from the implementation of appropriate education and planning.

^{1*}Senior nursing specialist, Hail Cardiac Center

²Specialist Nursing, Eradah & Mental Health complex

³Technician Radiology, Zalm General Hospital

⁴Khulais Hospital, Emergency ambulance services technician

⁵Paramedics, King Abdulaziz Hospital, Makkah-Saudi Arabia

⁶General Dentist, Bukayriyah General Hospital, Qassim

⁷Dental assistant, Primary health care altaneim

⁸Dental Assistant, Alnarjis & Alwadi Primary Health Care Center

⁹Dentist, Alfalah Primary Health Care Center

¹⁰Technician-Dental Technology, General Directorate of Health Affairs in the Qassim region

¹¹Dentist - Medical Affairs-Compliance Administration

¹²Primary Health Care Alfaisaliyah, Taif, General Dentist

¹³Dental assistant, Muhayil Specialist Dental Center

***Corresponding Author:** Mohammad Sayel hamad Alshammari

*Senior nursing specialist, Hail Cardiac Center

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Introduction:

It has become incredibly challenging to conduct an accurate analysis of the precise reported incidence of death and morbidity related to airway and facial injuries in our country as a result of the growing number of road traffic incidents inside our borders. There is a wide range of variations in the prevalence of maxillofacial trauma and airway involvement as a consequence of highway accidents; nonetheless, affluent countries have reported an incidence of approximately 22 percent [1,2]. Accidents are responsible for the highest fatality rate in India alone, reaching a peak that is 15–20 times higher than the rate in affluent nations. Accidents that occur on the side of the road have reached pandemic proportions and are placing an additional stress on our health resources [3]. Both the attending anesthesiologist and the intensivist are of the utmost importance when it comes to the primary management of the injuries, particularly those that have been sustained to the facial structures and the airway. Trauma to the maxillofacial region is generally linked to brain traumas, and damage to other essential organs might further contribute to an increase in the mortality and morbidity rates. The participation of young guys is the common denominator in the majority of these incidents [4], despite the fact that there is variability in the actual reported incidences of such trauma.

According to the World Health Organization (WHO), injuries are responsible for nine percent of all deaths worldwide. Maxillofacial trauma can have a variety of causes, depending on factors such as the location of the patient and the socioeconomic background. Facial trauma is most commonly caused by assaults and accidents involving motor vehicles in industrialized countries, whereas in underdeveloped countries, the most common cause is road traffic accidents. By the year 2025, traumatic experiences will have developed into the third leading cause of death in the developing countries. Maxillofacial trauma has considerably increased as a result of a number of factors, including the growing number of vehicles on roads, poor infrastructure, low compliance with traffic laws, and an increase in the amount of violence that occurs between individuals. Injury-related sports injuries and accidents that occur in the workplace are two other sources of such injuries. Trauma to the maxillofacial region and injuries to the skull are common among young men, as is the type of the injuries, which is commonly referred to as RSA. In addition to facial injuries, head injuries are a significant factor in determining the outcome of patients in this

situation. The timely administration of cardiopulmonary resuscitation and surgical procedures at specialized centers are of the utmost importance in terms of improving the prognosis for patients who have sustained such injuries [5].

Review:

In every region of the world, the top cause of death is trauma. In the United States, traumatic experiences are the top cause of death among young people and are responsible for ten percent of deaths among all males and females worldwide. Every year, roughly fifty million people in the United States go to the emergency department because of injuries sustained in traumatic events. Trauma victims are most likely to die from bleeding, cardiopulmonary arrest, and multiple organ failure syndromes [6]. These are the most prevalent causes of death caused by trauma victims.

As a result of the fact that airway blockage is a significant and avoidable cause of death in trauma victims, it is the first step in the first survey. The first step in evaluating the airway of a cognizant patient is to have a conversation with the patient. Find out if the patient is able to respond in a clear and suitable manner by asking them their name. The patency of the airway can be evaluated with the use of this. Additionally, a visual examination of the patient is included in the airway evaluation step. The patient's face, oral cavity, and neck should be examined, and the patient's neck and face should be palpated. Additionally, you should listen for stridor and look for symptoms of respiratory distress. During the process of evaluating and palpating the patient, it is important to look for any oral or dental injuries, barriers to intubation, such as unstable midface fractures, and even the location of a suspected cricothyrotomy. Intubation should be performed immediately on the patient if they are unconscious or if they are not protecting their airway and breathing. In the event that intubation is not possible, cricothyrotomy should be carried out. The immobilization of the cervical spine must be maintained if intubation is performed. When the patient needs to be intubated, it is imperative that the endotracheal tube is kept in a secure position. This is because unintentional extubation is the greatest cause of morbidity in patients who have suffered trauma [7].

Prehospital

One of the initial steps in the trauma assessment process begins before the patient arrives at the hospital. The collection of the care team, the

equipment, and the first information is included in this step. The information that emergency medical services (EMS) should offer includes the mechanism of injury, the patient's vital signs, any obvious injuries, the interventions that are currently being performed, and the patient's age and gender, if they are available. After being provided with this information, the members of the healthcare team should immediately begin considering the possibility of injuries that could pose a risk to the patient's lifespan. The trauma team may be different depending on the location of the hospital and the number of staff members, but it should always consist of at least a nurse and a physician. After the team has arrived, and ideally before the patient arrives, roles should be allocated to each member of the collective. There is a requirement that a single person, typically the physician, be designated as the leader of the team. Among the other possible duties are recordkeeping, management of the airway, access to the intravenous line, attachment of monitoring equipment, and administration of medication. Beginning with the arrival of the patient and continuing throughout the evaluation, the leader of the team should be in charge of assigning duties, as well as determining the direction and making decisions. Following the gathering of the team and the provision of the initial information by emergency medical services (EMS), it is necessary to collect and prepare all of the necessary equipment. Preparing the necessary equipment for intubation, cardiac monitoring, intravenous or intraosseous access, and any other intervention that may be indicated by the initial information received is an essential step that must be taken. There is a possibility that more actions and equipment may be required in addition to those that were predicted in the prearrival report. It is also essential to have fast access to additional resources [8].

The room should be calm when the patient arrives, and emergency medical services should provide a brief presentation about the patient and their findings. There is a possibility that the primary survey will have to begin during the EMS presentation, however this will depend on the patient's health. Prior to their departure, every attempt should be taken to get the relevant information from emergency medical services (EMS) in the event that this occurs. The American College of Surgeons is responsible for the development of Advanced Trauma Life Support (ATLS), which in turn supports the core survey sequence as ABCDE, which stands for airway, breathing, circulation, disability, and exposure [8].

Airway & Breathing

The blockage of the airway is the first step in the primary survey since it is a major cause of death in trauma victims that can be avoided or mitigated. Beginning with a conversation with the patient is the first step in evaluating the airway of an awake patient. Inquire about the patient's name to determine whether or not they respond in a manner that is both clear and appropriate. This will assist in determining whether or not the airway is patency. In addition, a visual examination of the patient is utilized during the airway evaluation. Examine the patient's face, oral cavity, and neck, as well as palpate the patient's neck and face. Then, listen for stridor and look for symptoms of respiratory distress. Keep an eye out for any oral or dental injuries, barriers to intubation, such as unstable midface fractures, and even the location of a possible cricothyrotomy when you are evaluating and palpating the patient. Patients should be intubated as soon as possible if they are unconscious or if they are not guarding their airway. A cricothyrotomy should be conducted in the event that intubation is not possible. Should intubation be performed, it is imperative that cervical spine immobilization be maintained. Because inadvertent extubation is the greatest cause of morbidity in trauma patients, it is imperative that the endotracheal tube be kept in a secure position if the patient needs to be intubated.

The patient's breathing and ventilation should be evaluated when the airway has been secured or maintained by the patient. Conducting a visual examination of the patient's chest in order to identify any injuries is part of this procedure. When looking for flail chest, penetrating injury, or tracheal deviation, you should be on the lookout for counterintuitive chest movement. During the auscultation of the lungs, listen for a decrease in the sounds of breathing. When palpating the chest, look for any symptoms of crepitus. Needle decompression or a chest thoracostomy should be performed immediately on the patient if they exhibit symptoms of tension pneumothorax. Take the patient's oxygen saturation reading and evaluate it. In addition to the physical examination, it is recommended that imaging of the chest using ultrasound or x-ray be considered [9,10].

Circulation & Disability & Exposure

In the assessment of circulation, the primary focus is on controlling bleeding and ensuring that enough perfusion is maintained. Hemorrhage has been determined to be the most prevalent cause of

mortality that can be avoided in individuals who have experienced trauma. To begin, conduct a visual examination of the patient, looking for signs of shock such as pallor or obvious signs of external bleeding. Perform a palpation of the patient's carotid and femoral pulses while simultaneously determining whether or not the skin is cold and sweating. Additionally, the patient's mental state can provide hints as to how well they are perfusing their key organs; nevertheless, it is important to exercise caution when relying on this information in patients who may have suffered a brain injury. When there is bleeding from the outside, it is important to try to limit the bleeding by applying direct pressure. The application of a tourniquet is an option for treating arterial bleeding that originates from an extremity. In the event that the patient does not have central pulses that can be palpated, additional inquiry and treatment are required. When searching for severe hemorrhage, it is important to look in the following five areas: the thorax, the peritoneal cavity, the retroperitoneal cavity, the pelvic or long bone fractures, and the exterior area. For the purpose of determining whether or not there is intra-abdominal hemorrhage, the focused assessment using sonography in trauma (FAST) exam may be utilized. Initially, isotonic intravenous fluids may be delivered to patients who are experiencing shock; however, blood products, which include a ratio of red blood cells to plasma to platelets of one to one to one, are preferred for patients who have continuous fluid requirements and are concerned about bleeding. Be conscious of the fact that the trauma victim might be taking anticoagulation, and it might be necessary to reverse this treatment. Shock can also be brought on by another condition known as tension pneumothorax, cardiac tamponade, or injury to the spinal cord. Further assistance in the identification of cardiac tamponade and pneumothorax can be provided by the FAST exam as well as the extended FAST exam, which also includes pulmonary examination. When an intrathoracic cause of shock is suspected, a thoracotomy may be performed to treat the condition. The establishment of sufficient intravenous access in individuals who have suffered trauma is also of essential relevance. Prior to the beginning of the evaluation period, it is recommended that two large-bore peripheral intravenous lines or a working intraosseous access be established. In addition, cardiac monitoring must to be initiated as quickly as is practically possible [11,12].

After the patient's airway, respiration, and circulation have been reviewed and stabilized, the

next step is to evaluate the patient's neurologic function. Utilize the Glasgow coma score (GCS) to determine the level of awareness exhibited by the patient. Consideration ought to be given to definitive airway control for individuals who have a global consciousness score (GCS) of eight or lower. Examine the volume and responsiveness of the pupils. In order to identify any indications of spinal cord injury, it is important to evaluate the patient's motor skills and sensation in all four extremities. Continuous immobilization of the cervical spine should be maintained. The removal of all clothing is the fifth and last phase of the primary survey. This serves the purpose of evaluating the patient for any evidence of injury, including but not limited to gunshot wounds, stab wounds, abrasions, lacerations, ecchymosis, and any other traumatic findings. It is essential to remember to keep the patient warm at this stage since hypothermia can result in the failure of multiple organs [13].

After the patient has been stabilized, a secondary assessment is carried out, provided that the patient does not require emergency surgical intervention being conducted. As part of the secondary assessment, the patient will have additional diagnostic tests, a comprehensive head-to-toe examination, and additional history collection. piercing abdominal trauma, piercing thoracic trauma, blunt abdominal trauma with internal organ injury, and extremities trauma such as fractures and compartment syndrome were the four types of injuries that were overlooked the most frequently during the survey. It is important to include the patient's past medical and surgical history, as well as their drugs and allergies, in the additional history [14].

Conclusion:

Evaluating and tending to a trauma patient necessitates a collaborative endeavor, including meticulous coordination and efficient exchange of information. Inadequate patient outcomes may result from misdiagnosis, communication discrepancies, and insufficient situational awareness. In order to prevent the omission of a diagnosis, it is important to keep in mind a number of factors. Envisage the most worst situation, attentively heed the instructions of EMS while bearing in mind that the data provided may be imprecise, consistently reevaluate the condition of the patient, collaborate and maintain a professional demeanor with fellow members of the trauma team, and avoid becoming fixated on your first diagnosis. In order to prevent any miscommunication, it is imperative to designate a

single team leader. The team leader has the responsibility of allocating positions and assigning specific tasks. The team leader should consistently inform the entire team on any new discoveries and alterations in the patient's condition and the overall strategy. It is imperative to utilize closed-loop communication consistently. In order to preserve situational awareness, it is imperative for the team leader to actively promote and encourage all team members to promptly communicate any concerns or unusual observations. Regular and thorough patient monitoring, together with continuous reassessment of the patient, will aid in the preservation of situational awareness. The nursing team executes procedures during the evaluation of trauma patients. Before the patient arrives, the nursing team is assigned specific responsibilities. Understanding your position and being ready to carry out the required activities is crucial. Typical responsibilities include documenting information, monitoring the patient's heart activity, measuring vital signs, inserting an IV catheter, checking blood sugar levels, collecting lab samples, conducting an electrocardiogram, providing drugs, and engaging in CPR. When a nurse is unable to fulfill a certain responsibility, it is crucial to notify the physician in order to have the duty transferred. Upon the patient's arrival, the nursing staff should carry out their designated responsibilities. Prior to providing any prescription, it is important to reiterate the name of the medication, the prescribed dosage, and the method of administration. This repetition should also be done after the drug has been given. The documenting nurse maintains a record of examination findings and activities taken, together with the corresponding timestamps. To enhance patient outcomes, the nursing staff can employ the strategy of restating instructions before executing the corresponding activity. This enhances the efficacy of communication and precision of therapy. Nurses should also express any concerns and offer any recommendations that they believe may benefit the patient.

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