Management of Multiple Injured Patient In Acute Phase

Thesis

Submitted in Pertial Fulfilment

For

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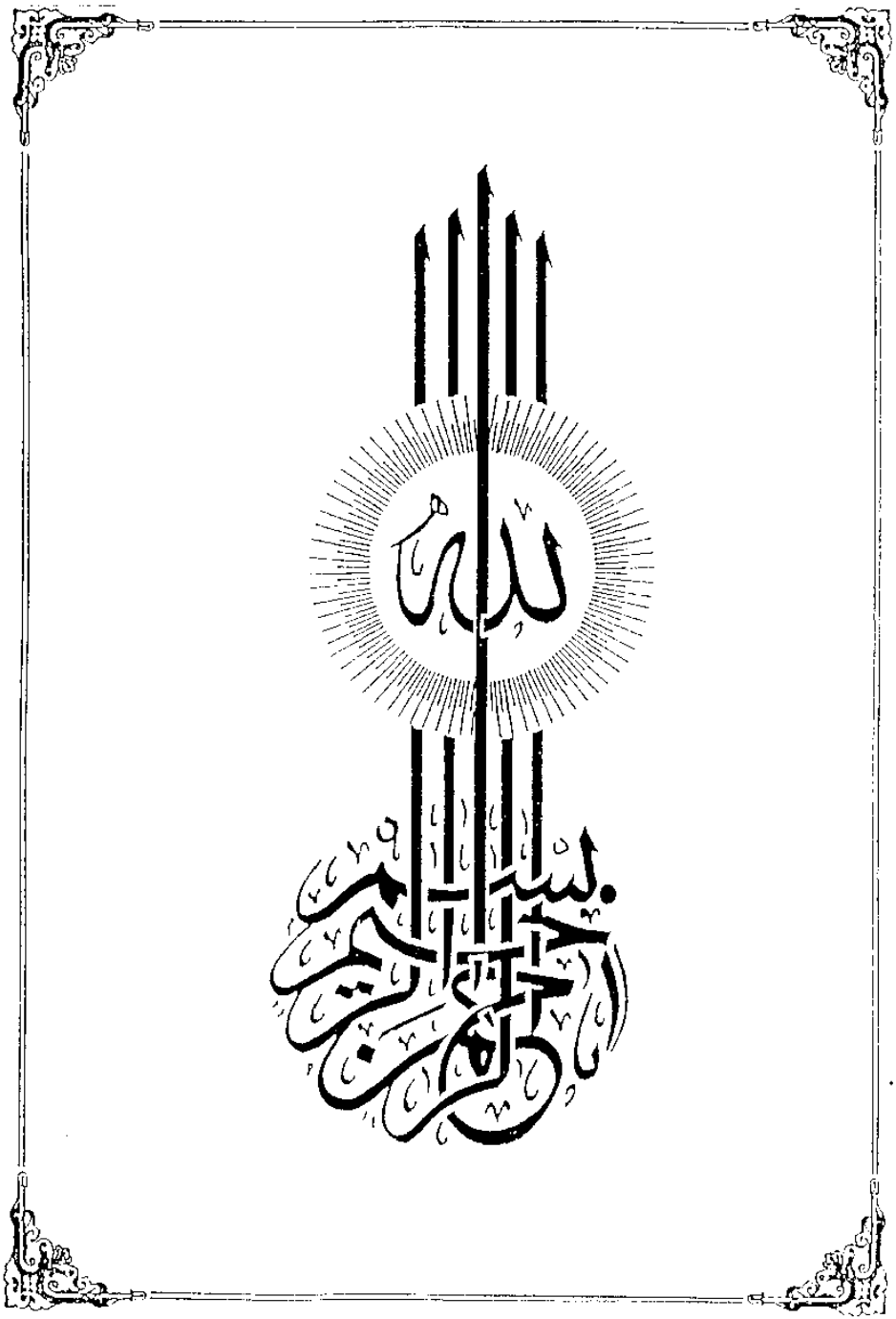

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INTRODUCTION

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In our rapidly advancing world, Trauma and its sequalae are the main causes of death. Many causes help in increased rate of trauma; the rapid increase in the numbers of high speed vehicles on the roads, the increasing numbers of the working population involved in the industry and the extension of mechanical devices in the home. Here in this paper we are dealing with patient with multiple injuries whatever the cause. Starting with early evaluation even at the site of accedent, early ampulance to the hospital which is ready for treating such patient according to his injuies.

We deal with primary assessment and shock therapy, methodes for early diagnosis and investigations and treatment of specific injuries with every region or organ or system.

Simply the treatment depends upon choicing right patiet ei. according to the type of his injuies, and transportation to right hospital which is prepared for dealing with such cases having well trained personnel, and ampulance should be at right time to avoid complications of trauma as possible as we can.

PRIMARY ASSESSEMENT & RESUSEITATION

PRIMARY ASSESSMENT

In the multiply traumatized patient, assessment and resuscitation are often simultaneous events. We are recieving alive, seriously injured patients that otherwise might have died prior to their arrival to the emergency room. Rapid evaulation, resuscitation, and prompt definitive surgical intervention is needed in these patients to improve their survival. Often there is an unavoidable emergency intervention between the need for a rapid and yet initial assessment. In unstable trauma victim, diagnostic studies must be by-passed and the patient taken immediately to the operating room. (Freeark, 1981).

If the patient has vital signs he or she should be stripped of clothes provided that there are no contraindication (fracture spine), rolled from side to side to assess the back for injuries. The characters and symmetry of the chest wall motion and the pattern of breathing are noted and the chest is quickly auscultated.

The mouth and the neck are checked for direct injury. The carotid pulse the tracheal position, and the character of the neck veins are noted the distal extremities should be checked, if it is cool, pale and

clammy, a state of shock should be presumed, (the character of the neck veins is the key in determining whether the shock is hypo-volemic or based on cardiogenic or preload mechainsms). (Levison, et al., 1982).

This entire initial examination should takes no longer than few seconds and is performed as vital signs are measured. Immediate attention is then turned to the following priorities:

First Priorities:

1. Airway.
2. Rapid external bleeding.
3. Cardiovascular pump and volume.

Second Priorities:

1. The second examination:
   a) Neurologic.
   b) Orthopedic.
2. Occult haemorrhage.
3. Definitive diagnosis.

INITIAL PRIORITIES FOR MULTIPLY INJURED PATIENTS

Airway:

Clearing of the oro-pharynx is the first step in establishing an airway. In the unconscious patient this is best accomplished by placing a finger in the mouth and sweeping out all debrise. In the conscious patient it is better accomplished with a tonsil sucker. The head should be turned to the side unless there is concern for cervical spine injury. Fascial injuries sometimes present a difficult airway problem. Occasionally drawing of the tongue forward with a towel clamp or silk suture establishes an other wise hopless airway. If upper airway obstruction is present, establishment of a patent airway is best accomplished by lifting the angle of the jaw and slightly extending the neck. If cervical spine injury is suspected, an axial orientation is mandatory.

One should not be overanxious to intubate a conscious patient since it may induce vomitting and aspiration. If patient is not breathing spontaneously, respiration should be established by bag and mask. Supplemental oxygen should be administered. Adequate oxygenation and correction of hypercapnia should be accomplished before intubation is attempted (Lewis, 1982).

In emergency situation crico-thyroidotomy is prefered to tracheostomy because of the super-ficial location of the crico-thyroid membrane (Dudley, et al., 1976). The procedure is rarely needed but is indicated when soft tissue injuries of the face preclude oral or nasal intubation, when laryngeal fractures from cervical trauma result in upper airway obstruction, and when there is concern for cervical spine injury and the neck cannot manipulated.

Additional measures, as chest wall stabilization and or positive pressure breathing may be required in crushing inuries of the chest, mechanical ventillation is usually indicated in patient in profound shock, respiratory failure from any cause and those with sever impairment of respiratory apparatous (flail chest, diaphragmatic rupture or paralysis).

Control of Rapid External Bleeding:

Simple pressure directly to the bleeding site will almost always control bleeding until definitive treatment can be given. Tourniquets are rarely indicated except in the case of traumatic amputation, wounds should not be probed, and blind clamping is contra-indicated because it interfers with the chances for primary vascular repair and can result in permanent nerve injury, (Nashaat, et al., 1983).

Cardiovascular Concerns:

The next priority is to assess the cardiovascular status. This system consisting of functioning pump and an adequate circulating blood volume which is essential for the transport of oxygen from the alveoli to the peripheral tissue.

The following conditions may cause immediate pump failure resulting in shock; tension pneumothorax, pericardial tamponade, myo-cardial contusion, myocardial infarction and coronary air embolism. (Martin, et al., 1980). Pump failure should be suspected in any patient in shock; generally with hypotension, whose extremities are cold, pale, or clammy and whose neck veins are distended.

The diagnosis of tension pneumothorax is suspected when there is respiratory distress and shock accompanied by unilateral breath sound, distended neck veins and shift of the trachea to the opposite side. In unstable patient it is unwise to wait for confirmatory chest radiogram. It is treated on a temporary basis by inserting a 16 - gauge needle in the second intercostal space of the involved side. Tube thoracostomy is the definitive therapy.

Pericardial tamponade is often a life threatening emergency that can cause the patient to go into cardiac arrest early. The key for diagnosis is when the patient is in shock with distened neck veins but on evidence of tension pneumo-thorax. Early pericardio-centesis may be helpful in temporarily treating the patient but if it fails or the patient goes into arrest from tamponade immediate thoracotomy is indicated. (Baker, et al., 1980).

Myocardial contusion is usually a result of blunt chest trauma and can cause serious arrhythmias, it is suspected in children and patient with sternal facture. (Lewis, 1982).

Myocardial infarction also must be considered in traumatized patient in cardiogenic shock, it may result from blood loss, hypoxia catecholamine stimulation. (Seiichi, et al., 1983). Therapy is the same as myo-cardial contusion by continuous monitoring with lidocaine and support for cardiogenic shock.

Coronary air embolism is an unusual complication of injury to the lung parenchyma, it may leads to hemi-paresis and cardiogenic shock. Treatment of this condition is emergency thoracotomy. (Ingida, et al., 1979).

Volume resuscitation is mandatory since it is essential to carry oxygen from the alveoli to the peripheral tissue and removal of metabolites. In the severely injured patients shock must be anticipated. The first step is to establish an adequate intravenous life-line, preferably utilizing a plastic catheter which is not easily disloged from a vein as the standard intravenous needle. At the time the intravenous infusion is started, a blood sample should be drown for blood type and cross-matching as well as baseline laboratory tests. The cause of shock may not be immediately apparent. Since internal: bleeding with hypo-volaemia is the most likely cause, initial treatment should be the rapid infusion of crystalloid solution. (Ringer's lactate solution or normal saline). In general 2 liters of balanced salt solution can be infused rapidly without risk in the hypovolaemic patient (Schwartz, et al., 1983). In severly traumatized patient, blood should be administered to maintain the haematocrite value at about 30 per cent. This maintain oxygen carrying capacity while reducing viscosity in the micro-circulation. It is often necessary to give type specific blood. If the blood bank cannot supply the needed type specific blood, type O negative blood can be given with little risk. Auto-transfusion is a useful and lifesaving technique that enable the patient to