THE MANAGEMENT OF ABDOMINAL TRAUMA

ESSAY

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بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيمِ

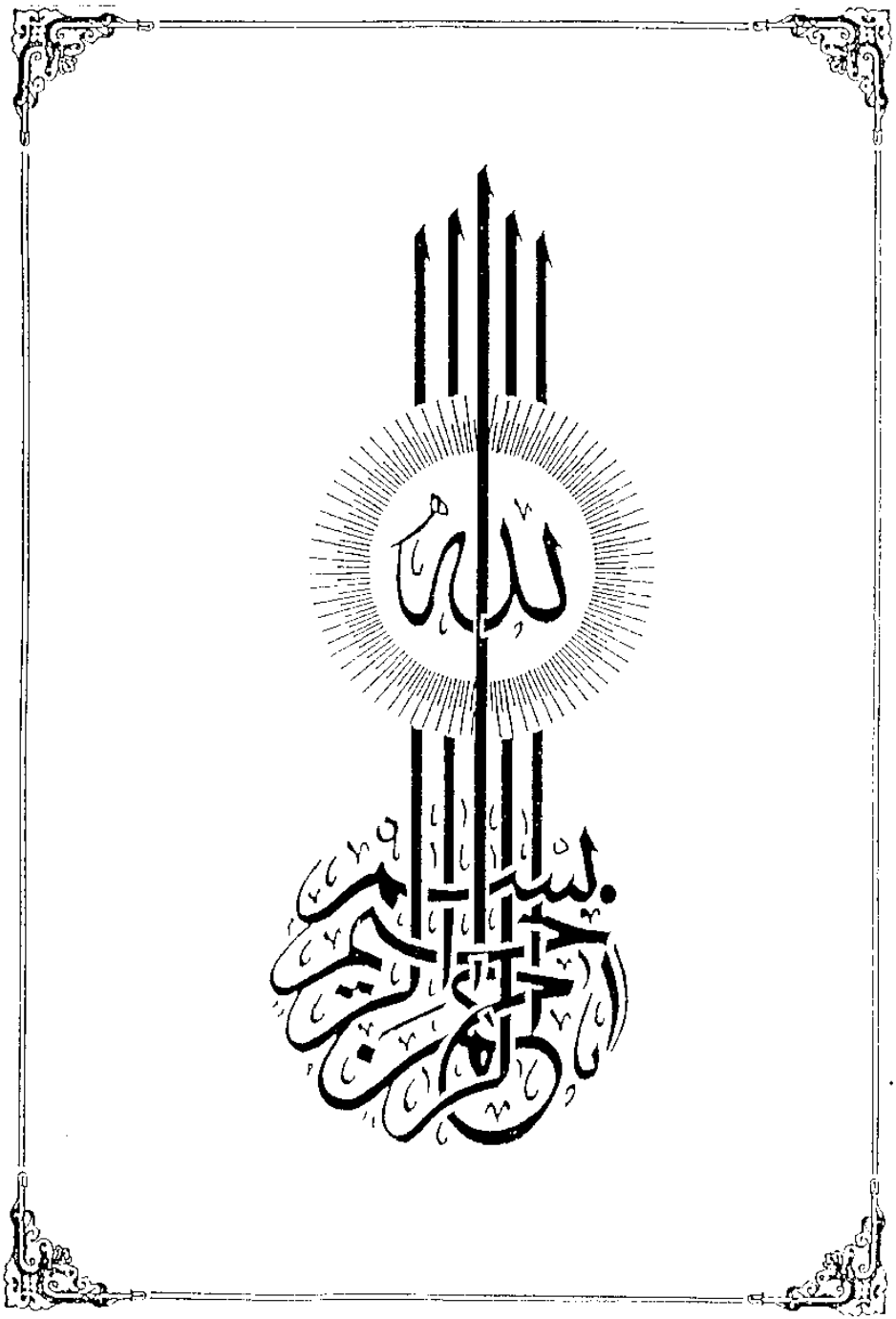
وَبِهِ نَسْتَعِين

"رَبَّنَا ...

آتِنَا مِن لَّدُنْكَ رَحْمَةً ...

وَهَيِّئْ لَنَا مِنْ أَمْرِنَا رَشَدًا "

صَدَقَ اللهُ العَظِيم



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INDEX

INTRODUCTION

Abdominal trauma comprise a significant proportion of wounds sustained in both military and civilian experience. They are associated with high morbidity and mortality. Nowadays, they represent one of the common causes of death in developed and developing countries.

Abdominal trauma causes a group of general syndromes which affect the life of the patient.

Before discussing Abdominal trauma we must deal with these syndromes to understand.abdominal trauma. These syndromes are shock and respiratory failure. We need blood transfusion as first line of treatment on major types of abdominal injuries and thus we must discuss firstly.

All medical personnel should have a good idea about the types, mechanism, pathology, diagnosis and management of this catestrophy. Therefore, the aim of this work is to lay stress on these points and try to clear out the best ways to lessen the morbidity and mortality of these injuries which depend mainly on early diagnosis and treatment.

With increasing civilization and progress of motor car vehicles, the advanced of army weapons and modern industrial equipment, trauma is increasingly raised. Abdominal trauma is greatly increased. Abdominal trauma is one of most important of these trauma .

Abdominal trauma not only produces injuries to abdominal viscera, blood vessels, bones and nerves, but also produces break down of general physiological effects gives a group of syndromes. This syndromes are shock, post traumatic respiratory distress syndrome and disturbances in electrolyte and tissue fluid of the body. Associated intra-abdominal, extra abdominal tears of epigastric vessels or retroperitoneal hemorhages shares in advancing and aggrevating shock. Thus blood transfusion is exceedingly needed in severe abdominal trauma especially those associated with hemorhage. Blood transfusion has a wide variety of complications which the medical personnels must know what they are? How are they happened? How can we prevent them? and If they are happened the methods of treatment of these complications.

There fore we must discuss.

A. shock.

b. Blood transfusion.

C. Respiratory failure.

before dealing with details of abdominal trauma to understand the methods of management of abdominal trauma.

Shock

SHOCK.

Definition:

There are many definition of shock. The earlest definition were the clinical discreption of injury, a typical appearance. Later on it is defined as the decreased blood flow to vital organs. During 197o the definition of shock have been altered, because hemodynamics measurements in patient in shock due to sepsis, frequently reveal a high cardiac out put and low peripheral resistance.

This patients have many characteristics of shock as elevated arterial blood lactate, hypotension and oliguorea, but differ from patients with hypovolemia or traumatic shock that they frequently have warm dry extremities and severe respiratory alkalosis from hyper-ventilation. A current definition to include all these possibelities is "inadequate blood flow to vital organs or inabelity of the body cell mass. to metabolise nutrient normally" "MAC LEAN 1981".

Shock is a state of complex enter-related sets of physiological hemodynamic, micro-circulatory and biochemical derangement initiated by one or more events, a combination of these and the reaction of the body to stress leads to clinical syndrome of shock. ALLAN BIRCH 1976.

It is becoming progressively more difficult to write coherently and informatively about shock, In that it has come to mean so many different things to different people. Much of the confusion is semantic the use of the word to describe other things than clinical syndrome or syndromes for example eitiological and mechanisms. If this borne in mind much of the hazziness surrounding the word disappears. . BEVAN ET AL 1977.

Mitchell et al attributed to shock to the loss of vital control by nerve centre orto paralysis of vaso-motor nerve serving centre "reflex paralysis•STONE et al. 1983.

CLASSIFICATION.

I - Hypovolaemic shock.

II - Cardiogenic shock .

III - Peripheral pooling shock.

A. Loss of tone in resistance vessels "spinal shock.

B. Trapping the capacitance vessels "endotoxic shock.

IV - Septic shock.

The previous classification of shock based on our most recent understanding. " MAC LEAN. 1981".

The purpose of any classification is to facilitate recognition and promote correct and specific therapy as quickly as possible. This classification suggests that hemodynamic diagnosis should be made as soon as possible and treatment based on this stated before. A clinical diagnosis is established.

I - HYPOVOLAEMIC SHOCK

Causes of hypovolaemic shock.

A. Blood Loss : The loss of blood volume and reduction of cardiac output tend to lower the blood pressure. "WALTER AND ISRAEL."1974".

a - Trauma.

i - Penetrating wounds involving the heart or large vessels may result very rapid loss of large quantities of blood, Bleeding from large vascular space exposed during labour can be of frightening severity.

ii - Abnormalities of the blood vessels wall.

a - Inflamatory lesion may cause weakening of the vessel wall usually arterial with subsequent rupture. Aneurysmal dilatation may occur before the final rupture. Bleeding from chronic peptic ulcer, Rausmussen aneurysm traversing TB cavity in the lung and syphilitic aortic aneurysm.The inflamation need not be infective eg polyarthritis nodosa. "WALTER AND ISRAEL. 1974".

b. Neoplastic. Hemorhage is frequent terminal events in carcinoma of tongue, and is due to rupture of lingual artery . Inflamation is probably a major factor weakening the wall.

c. Other vascular diseases.

i - Atheroma either with or without aneurysmal dilatation is the most common cause & aneurysms due to trauma or persistent friction eg subclavian aneurysm due to cervical rib also fall into this category.

ii - High pressure within the vessels Systemic Hypertension may precipitate hemorhage at the site of arterial weakness . Raised venous pressure with varicose vein formation eg in the leg or oesophagus is another important cause of severe haemorhage.

B - Plasma loss: Rapid lose of plasma from circulation occurs whenever an acute inflamatory reaction involves a large area of the body. This is seen experimentally in tourniquet shock, This is due to leakage of plasma to infarcted limb. Semilar state is seen in crush injuries, following extensive burn and when there is the rapid accumulation of an exudate eg ascites. Generalized loss of plasma from circulation is a factor in shock of anaphyla-

xis . WALTER AND ISRAEL. "1974".

C. Fluid loss.

i - Inadequate fluid intake.

ii - Excessive sweating.

iii - Severe vomiting.

iv - Severe diarhea.

v - Dehydraion is also the feature of diabetic comma "WALTER AND ISRAEL. 1974.

PATHOPHYSIOLOGY OF SHOCK

The vascular system is contineausly regulated by vasomotor centre in the medulla. The centre is supplied with information via and to cranial nerves from stretch receptors monitoring pressure in carotid sinus and aortic arch."MAC LEANS. 1981".

The peri-ventiricular tissue in the pre-optic region of anterior hypothalamus "antero-vantral third ventricle $A.V._3V$". has been shown to play an important role in central cardiovascular control, electrical stimulation of this region elicit complex cardio-vascular responses consisting of vaso-dilatation in some vascular bed and vaso-constriction in others . Further more $A.V._3V$ region is involved in regulation the effects of angiotensin on blood pressure, fluid consumption and release of anti-diuretic hormone. More recently we have suggested that this region is also a site of central cardio-vascular control by endorphins the opiate receptors." GIORA FEUESTIEN. 1984".

In shock the fall in arterial blood pressure produce a response prodomenantly through a sympathetic nervous system increase periphral resistance by arteriolar cons-

triction and cardiac output by increase the rate and the force of cardiac contraction . The effective blood flow is inhanced by increase vaso-motor tone which squeeze blood from the large reserviors into the central circulation .

The sympathetic resposes seen in shock direct blood from extremities bowel and kidney to the more vital area as heart and brain, the vessels of which constrict little under intense sympathetic stimulation. The cardio-vascular response to haemorhage is serve initially is to redistribute blood flow to vital coronary and carebral vascular system. "FLINT ET AL.1984".

The vascular changes during shock due to hemorhage occured via catecholamine and vasopressin. Catecholamine acts by inotropic and chronotropic effect on the haert and vaso-constriction of splanchnic blood vessels. Vasopressin have many physiological function. This functions are:vasopressin may be a significant factor in blood pressure, regulation during hypotension.Recent studies indicate that hemorhage induced increase plasma vassopressin contribute to recovery of blood pressure following moderate shock another possible salutary effect of vaso pressin in circulatory shock is stimulation of reticuloendothellium phagocytic function which significantly depressed in animal that lack of indogenous vasopressin. However arginine vaso pressin also possesses a property that exacerbate the shock state including constriction of coronary artery and the intestinal resistance vessels