MANAGEMENT OF SEVERE HEAD INJURY IN POLYTRAUMATIZED PATIENTS

A Thesis
Submitted to Ain Shams Faculty of Medicine,
For partial fulfillment of master degree of
NEUROSURGERY

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2012

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LIST OF ABBREVIATIONS

AIS	Abbreviated injury scale
API	Arterial pressure index
ASDH	Acute subdural hematoma
ATLS	Advanced trauma life support
BLS	Basic life support
BVM	Bag valve-mask
CBF	Cerebral blood flow
CPR	Cardio pulmonary resuscitation
CSF	Cerebro spinal fluid
CT	Computed tomography
CVP	Central venous pressure
DAI	Diffuse axonal injury
DC	Decompressive craniotomy
DPL	Diagnostic peritoneal lavage
EDH	Epidural hematoma
EMS	Emergency medical service
GCS	Glasgow coma scale
ICP	Intracranial pressure
ICU	Intensive care unit
IV	Intra venous
MAST	Medical anti shock trouser
MRI	Magnetic resonance imaging

OIS	Organ injury scale
RR	Respiratory rate
RTS	Revised trauma score
SBP	Systolic blood pressure
TBI	Traumatic brain injury

طرق علاج الإصابات الخطيرة بالرأس فى مرضى الإصابات المتعددة بالجسم

رسالة

توطئة للحصول على

درجة الماجستير فى جراحة المخ والأعصاب

مقدمة من

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2012

INTRODUCTION

Head injuries may damage the scalp, skull or brain. The most important consequence of head trauma is traumatic brain injuries. Head injuries may occur either as a closed head injury, Or as a penetrating head injury. Both may cause damage that ranges from mild to severe head injury which can be fatal because of the performed brain damage.(**Atabaki, SM, Stiell.et al..2008)**

Polytrauma is a medical term describing the conditions of patient who has been subjected to multiple traumatic injuries such as a serious head injury and a serious chest trauma or abdominal trauma.

Trauma is the leading cause of death in individual younger than 45 years of age, injury related death account for 78% in all mortality in persons aged 15 to 24 years. **(Arabi .B. Eisenberg H M., Murphy K., et al., 2004)**

In civilian life, poly traumas are often associated with motor vehicle accident. This is because car accidents usually occur at high velocity and subsequent injury is usually severe and consists of multiple damages.

Assessment of patient from head to toe repeatedly (vital signs, head, neck, chest, abdomen and extremities) and can be performed in less the 2 minutes allows placement of patients into management protocols according to severity of injury during early resuscitation. **(Andrew B.Peitzman, Michael Rhodes.et al ..2002)**

On admission to hospital any trauma patient should immediately undergo x ray diagnosis of cervical spine, chest and their pelvis. Commonly known as (trauma series) to ascertain possible life threatening injuries. Once initial survey is complete, x ray can be taken on the extremities to assess for

other possible fractures. It is also quite common in severe trauma for patient to go straight to C.T. or Surgery Theater if they require emergency treatment. **(Andrew B.Peitzman, Michael Rhodes.et al ...2002)**

Combination of major head and abdominal injuries are very serious, fatality was distinctly higher when surgery was anticipated in both region.

If the neurological condition of the patient is stable and there is small hematoma with no significant midline shift, the priority is paid first to the systemic injury which endangers his life. (**Bigler. E.D. 2000)**

If the neurological condition is unstable and C.T. shows large hematomas with midline shift and the condition is deteriorating, simultaneous operative procedures are performed. Cases of respiratory impairment due to haemothroax need urgent thoracotomy, also acute bleeding due to major abdominal trauma with rupture large vessels, liver and spleen are managed urgently either before or concomitant with operative evacuation of intracranial haematomas. **(Andrew B.Peitzman, Michael Rhodes.et al ..2002)**

Rapid evaluation, resuscitation and prompt definitive surgical intervension is needed in polytraumatized patients to improve their survival, the efficiency of any trauma center to optimize care of multiple injured patient, depend on the following, early resuscitation and stabilization either at the scene or in the hospital, rapid transportation of victim to an appropriate trauma care facility. Rapid surgical intervention on team approach to both resuscitation and definitive care. (**Baon R. and de Mantfor G.J. 2002)**

Aim of the work

The aim of this work is to study the management of severe head injury patients when associated with multiple trauma and the factors that affect such prognosis to avoid the deterioration effect of these combined injuries.

MATERIALS

This study will be conducted on cases of polytromatized patients with severe head injuries (GCS ≤ 8) admitted to Ain Shams University Hospital

METHODS

On admission and after appropriate cardio-pulmonary resuscitation, the patient's neurological status will be carefully evaluated and assisted.

All patients will be submitted to the followings:

- Full history
- Full clinical examination with special stress on the following points :
  - Age & previous state of health.
  - Type of trauma and its severity.
  - Associated injuries in the chest, abdomen ,spine and limbs.
  - Time elapsed between accident and admission.
    - Neurological examination :
      - Fixed clinical indicants: pulse, blood pressure, respiration and posture of the patient.
      - Brain stem reflexes : pupillary light reflex and occulo-cephalic reflex
      - Level of consciousness using the GCS.
      - Motor response and neurological deficits.
    - Radiological imaging
      - Including CT scan, Pelvi-Abdominal Ultrasonography and plain x-ray.
    - Surgical intervention.

Follow up.

INTRODUCTION

Aim of the Work