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## **HEAD INJURY: A CASE STUDY**

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### **ABSTRACT**

Head injury is a kind of trauma to scalp skull or brain and it ranges from a mild bump or bruise to a traumatic brain injury. Motor vehicle accidents, falls, physical assaults and sports related accidents are some major causes that lead to head injury. Symptoms of head injury will depend upon the severity of injury, area of brain involved in the injury. Clinically patient has symptoms like loss of consciousness, confusion and disorientation. Head injury requires immediate emergency management if patient have symptoms like mentioned above.1

**Keywords:** Head Injury, Sub-arachnoids hemorrhage.

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### **1. INTRODUCTION**

Head injury is also known as Traumatic Brain Injury. It is the most common cause of death and disability among the adult population. The injury may be mild like a bump, or may be moderate to severe in the nature due to area of brain involved, nature of concussion, open wound or deep cut, fractured bone of skull and face, internal and external bleeding of the brain. It is a broad term used for the trauma occurred to the scalp, skull, brain, underlying tissue of the brain, and blood vessels.2Sub-arachnoid haemorrhage is referring to leakage of blood into the sub-arachnoid space which is present between pia and arachnoid membranes of the brain. Most common cause of occurrence of subarachnoid haemorrhage is head trauma.3 India have highest rate of head injury in the world. In a year over 1 million individual suffer from serious head injuries out of that1 lakh individual died per year. In India 1 out of 6 victims of head injury died, while in United States 1 out of 200 individual died.4Motor vehicle crashes, assaults, sports injury, assaults and recreational activities are the common causes of head injury. Individuals with minor head injury have headache and dizziness on the other hand individual with moderate to severe head injury have symptoms like loss of consciousness and brain dysfunction.5

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### **2. CASE PRESENTATION**

38 years old male patient was bring by his family in emergency department of IGMC, Shimla. Patient had history of fall from stairs under alcohol intoxication leads to Loss of consciousness (GCS=E1V1M3=5), both pupils are not reactive to light.

#### **General Examination:**

Weight: 65 kg

Height: 5feet 9inches.

BMI: 22.03 kg/m<sup>2</sup> Physical activity:

#### **Physical activity:**

Not possible by the patient due to unconscious state.

#### **Past Medical History :**

Not significant

#### **Special investigations:**

NCCT head with spine, USG-eFAST, ABG, ECG, CBC, RFT, LFT, FBS, Chest X-Ray

**Treatment:**

Inj. Ceftriaxone 1gm BD, Inj. PCM 1gm TDS, Inj. Pantoprazole 40mg OD, Inj. Lasixn40mg BD, Inj. Emset 40mg OD, Inj. Piptaz 4.5gm TDS, Inj. Eptoin 100mg TDS, Inj. Lopez 4mg SOS, Inj. Butrum 2mg SOS and Inj. Mannitol 100 ml TDS.

**Intervention:**

Right FTP (Frontal Temporal Parietal) Decompressive Craniotomy done under General anaesthesia with bone flap in abdomen. In post-operative period patient was on mechanical ventilator support (SIMV Mode) for maintenance of breathing.6

**3. CARE PLAN**

**Ineffective breathing pattern:** In operation theatre patient got intubated and put on SIMV Mode to maintain breathing pattern of patient and continuously monitor sPO2 of the patient, routinely do ABG analysis for adjustment of ventilator setting.

**Ineffective airway clearance:** Due to unconscious state and mechanical ventilator more secretions are accumulated, suctioning will be done as needed by the patient.

**Infection at surgical site:** Sterile technique is followed for change the dressing of abdominal scar, suctioning, during access of central venous pressure and continuous monitor vital signs especially temperature

**4. OUTCOME**

After the Right FTP (Frontal Temporal Parietal) Decompressive Craniotomy damaged portion of brain is removed and the bone flap of cranium is kept in peritoneal cavity. After 15 days of surgery bone flap get infected and physician decided to discard it because infection is symptomatic (rise in temperature). Now patient is in High Dependency Unit for post Decompressive craniotomy care with ventilator support and other measures to sustain the life of the patient.

**5. DISCUSSION**

Head Injury is an injury to scalp, skull, underlying brain tissue and blood vessels. It is also known as Traumatic Brain Injury. Based on damage due to the head injury it is classified as Mild, Moderate and Severe. Sub-arachnoid haemorrhage is the bleeding in the space between brain and underlying tissue. Motor vehicle crashes, assaults, sports injury, assaults and recreational activities are the common causes of head injury. About 1 Lakh people died in a year due to head injury. Symptoms vary from mild headache to coma and loss of consciousness. Mild cases require no treatment only need close observation. Moderate and Severe cases is mainly focus on enough oxygen and inadequate blood supply and monitoring in intensive care unit. Antiseizure, Coma-inducing drugs and Diuretics are administered to prevent secondary damage. Surgical management is needed to minimize the additional brain damage like Burr hole, Craniotomy and Craniectomy.

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