

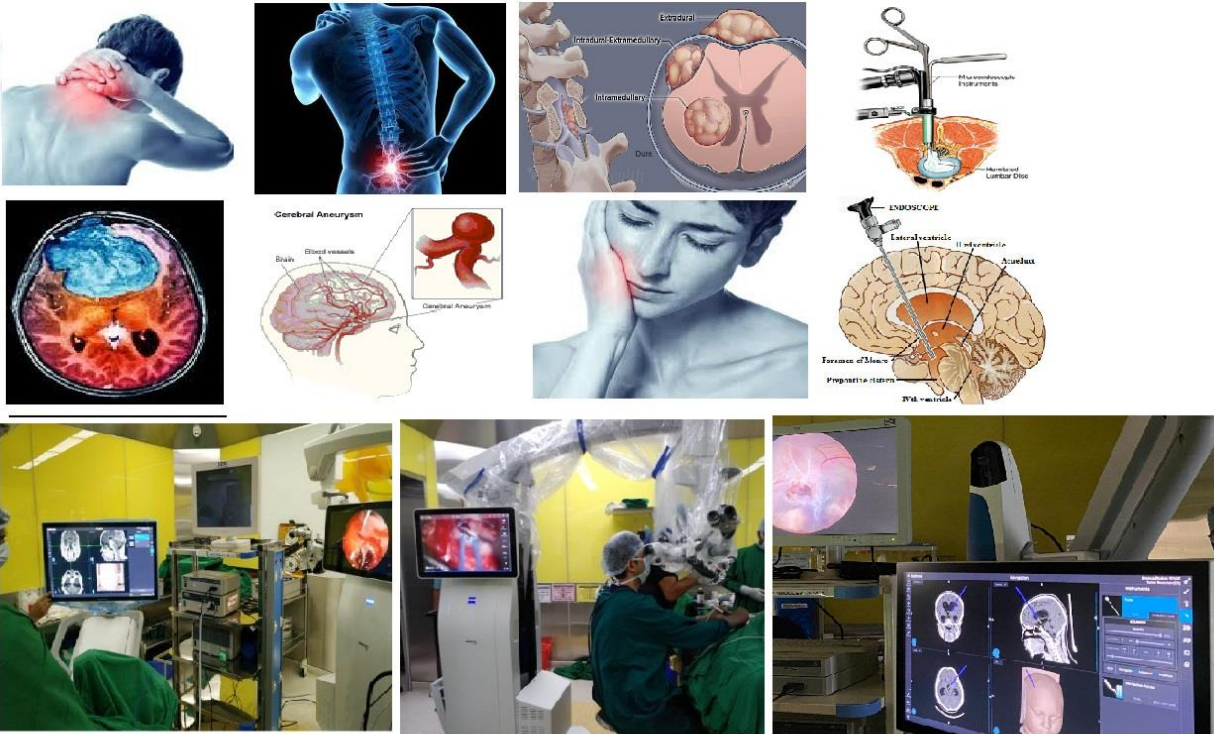
NEUROSURGERY CLINIC



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FELLOWSHIP IN MINIMALLY INVASIVE SPINE SURGERY, SEOUL
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SPECIALITIES: BRAIN TUMOUR SURGERIES, MICROVASCULAR SURGERIES,
NEUROENDOSCOPIC SURGERIES, TRANSNASAL ENDOSCOPIC SURGERIES, MINIMALLY
INVASIVE SPINE SURGERIES, COMPLEX SPINE SURGERIES, PEDIATRIC NEUROSURGERIES

Head Injury

What Is Head Injury?

Traumatic brain injury or more commonly called 'head injury'. is a broad term that describes a variety of injuries and damages to the scalp, skull, brain and underlying tissue and blood vessels in the head.

Almost everyone in his or her lifetime sustains some form of trauma to the head. People who are on anticoagulant therapy, especially the elderly, babies and those with problems such as alcohol abuse, are prone to serious consequences after a head injury.

In India, head injury is the leading cause of disabilities and deaths in adults under 40 years of age. As result, it has a significant impact on the brain-injured patients, family and society.

Common Causes

Head injury occurs most commonly after motor vehicle accidents, falls at home or at work, acts of violence, sports and recreational injuries.

Types Of Head Injury

Head injury can be mild to severe at nature and damage to the brain may occur immediately at the time of injury, or develop after the injury due to swelling or further bleeding. The common types of head injury include.



Normal CT Brain scan

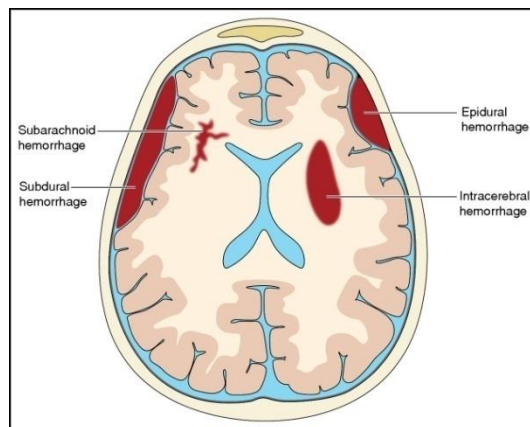


Figure showing different types of brain injuries.

Scalp Injury - refers to the bump and cuts of the scalp. Treatments include cold compression and suturing.

Skull fracture refers to the break or crack in the skull bone.

Linear skull fracture - Treatment is usually conservative as it does not cause many problems.

Depressed skull fracture is caused by direct impact onto the skull, which causes the shattered bones to be pushed into the brain,. Antibiotics and surgery to prevent further brain injury, bleeding and infections may be needed.



Depressed right frontal fracture

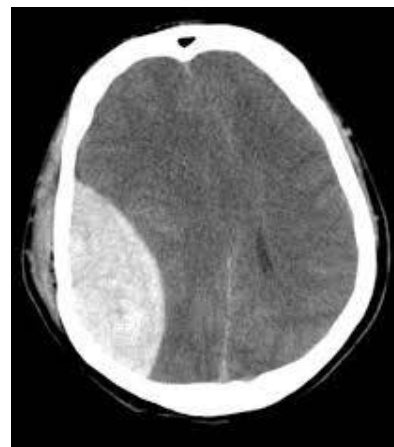
Concussion – is a “shake” to the head. Most people recover without any permanent damage. Symptoms such as headache, giddiness, nausea, vomiting may persist but generally, will get better over time. Treatment includes medications or symptom relief and adequate rest.

Contusion - is a "bruise" that may cause tissue damage and bleeding.

Haematomas (Blood Clots) refers to the collection of blood in one or several locations of the brain, Treatments for contusion and hematomas include observation for worsening of symptoms to the removal of blood clots. Prognosis depends on the type, size, and effect of the lesions on the brain.



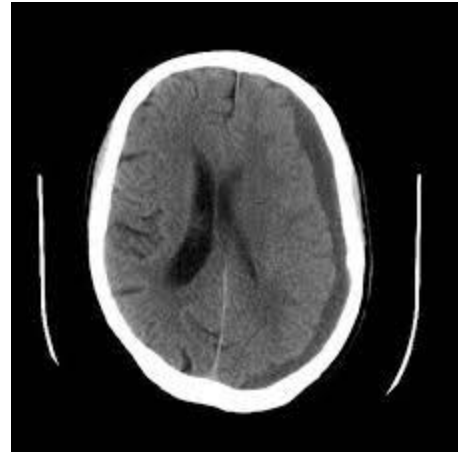
Traumatic IC bleed



Extradural hematoma



Acute SDH



Chronic SDH

Signs and Symptoms

Varying degrees of symptoms including temporary or permanent loss of consciousness, nausea, vomiting, headache, giddiness, and loss of memory may appear associated with the severity of the head injury. The signs and symptoms of a head injury may occur immediately or develop slowly over several hours to days. Even if no serious injury is found, careful observation with a responsible adult either at home or hospital must occur in the first 72-48 hours after the injury.

For the first 24 hours after a head injury, the person SHOULD NOT:

- left alone
- drive a vehicle or operate machinery: and/or
- take alcohol or any medications that can cause drowsiness.

Signs and Symptoms (continued)

Call for help or go to the emergency department if:

Any of the symptoms is getting worse example - Sleepiness, headache, vomiting, dizziness;

There are changes in your behavior such as irritability, confusion etc;

You are feeling weak or numb in the arms or legs;

There is fluid coming out from the nose or the ears.

Investigations

An X-ray may be performed to detect any fracture. CT scan of the brain may be ordered if the doctor thinks there are risks of acute bleeding that is life-threatening. The Glasgow Coma Scale (GCS) is based on the sum of scores in 3 areas of assessment – eye, verbal and motor response. this is an assessment too

used in the in the hospital to grade the severity of the head injury that influences treatment decisions and outcomes.

Severity of head injury can be classified as:

Severe: GCS 3-8

Moderate: GCS 9-12

Minor: GCS 13-15

Treatment

Treatment is individualized, depending on the degree and extent of injuries. It ranges from observation for signs of worsening such as drowsiness, headache or giddiness (minor head injury) to the removal of the blood clot in the brain to relieve the pressure in the brain or insertion of a brain pressure monitor for severe head injury. Treatment for most minor head injuries includes symptom relief and adequate rest.

Outcome and Complications

This depends on the type, location and degrees of injury. People with a minor head injury may have syndromes of concussion such as a slight headache, giddiness, decreased concentration and etc. that may persist for a while, but most recover with no permanent problems. After a severe head injury, one-third is left with varying degrees of disability while the rest do not survive.