Review Article

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Traumatic Brain Injury Premature Discharge: Negligence or Not?

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Abstract:

Saving the life of a patient is the top most priority for any surgeon, especially in cases of traumatic brain injury. In current scenario where cases of litigation against the doctors are on a sharp rise, the doctor should take utmost care during the course of treatment. Therefore it becomes essential for the treating doctor to follow the established guidelines.

A case where a Neurosurgeon was charged with negligence of premature discharge in a case of Traumatic Brain Injury came to us for review. A previous board of Doctors had ruled against the Neurosurgeon and held him guilty of premature discharge of the patient. On meticulously scrutinizing the case and all the relevant records, we came to the conclusion that the discharge was not suggestive of premature in nature and inadequate patient care.

All cases of traumatic brain injury should be assessed cautiously using the set guidelines. The conventional belief that GCS is sole criteria for discharging or admitting a patient is also not true. Multi-Organizational Consensus Recommendations for India in traumatic brain injury has laid down the guidelines for systemic approach to a patient of traumatic brain injury which should be strictly adhered to increases the chances of saving the life of the patient as well as reducing medical negligence charges.

Keywords: Traumatic Brain Injury; Negligence; Premature discharge of patient; GCS.

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Background and Importance

Head injury, a medical emergency, sometime may not present with obvious signs and symptoms except the history of head trauma especially in cases of closed head injuries. Therefore it becomes essential for the attending doctor to follow the established guidelines and treatment protocols. At the same time not all the patients can be admitted to the hospital just on the basis of a positive history of head trauma. According to guidelines, as discussed below, the patient can be discharged after initial assessment and satisfaction of the treating doctor. In such a case, though it becomes duty of the doctor to follow up the patient for further assessment.

Clinical Presentation

The deceased was brought to the casualty department in semi-conscious condition with alleged history of physical assault with E1V1M1 and bilateral subconjunctival hemorrhage with pupil dilated and fixed, pulse feeble, contusion bilaterally present over pelvis, swelling in left hand and left zygomatic area. He was intubated and kept on AMBU bag ventilation. He was visited by an orthopedic consultant for the said injuries. Later he was referred to neurosurgery department. On examination his GCS score was E4V5M6, pupils sensitive and reactive to light. NCCT head and USG abdomen reports were normal. It was decided that no active intervention was required. He was discharged on the same day. On 6th day he became unconscious and taken to a nearby hospital where he was declared as brought dead. In post mortem

examination a diffuse swelling was present on left temporo-parietal region with extravasations of blood underneath. The brain was edematous. No other relevant findings found. He was emaciated and a known drug addict. No definitive cause of death could be given, but it was opined that the possibility of death due to cerebral edema as a result of blunt force impact cannot be ruled out.

The case was referred to a medical board for gross negligence on the part of treating neurosurgeon for allegedly discharging the patient prematurely without considering the possibility of lucid interval which subsequently lead to his death. The board ruled that the neurosurgeon failed to keep the patient under observation for 24 hours and discharged him prematurely and didn't advise him to review after a stipulated time.

The case was again referred to us for further expert opinion. After going through all the documents and references guidelines, the board concluded that:

The patient was investigated in detail and discharged after regain of consciousness as suggested by GCS of 15/15 and normal investigations, and after clinical stability and supervision arrangements the discharge is not premature in nature and inadequate patient care.

Discussion

Traumatic Brain Injury is usually associated with loss of consciousness. The patient may awaken from this to achieve a good level of consciousness only to lose consciousness again from brain stem disorientation caused by the clot growth (lucid interval). The person may remain active for a period varying from a few hours to a week, happens in 30-40% of cases.[1,2] It is usually associated with Epidural hematoma and seen in 20-50 % cases.[1,2] It is also seen in cases of Subdural hematoma in cases of traumatic brain injury. There is no consensus on how long this period may span, it has been described by Ganz as lasting from a few hours to a few days.[3] Delayed cerebral edema, a very serious and potentially fatal condition may follow a lucid interval that occurs after a minor head trauma.[4] In this case though the board ruled considering the lucid interval, it appears to be a case of cerebral edema, a delayed complication of head trauma, as confirmed on autopsy. It is further strengthened by the fact that no intracranial bleeding or clot formation was present on autopsy.

The Glasgow Coma Scale (GCS) is the standard scoring system used globally in emergency departments as an objective indicator to assess the neurological status of patients with traumatic brain injury.[5] It has been frequently used as one of the most important predictors of outcome after traumatic brain injury. A score less than or equal to 8 is the traditional criterion for differentiating between severe and moderate to mild head injury, and patients' management is frequently dependent on this initial classification.[6]

The early prediction of outcome after traumatic brain injury (TBI) is important for several purposes, but no prognostic models have yet been developed with proven efficacy across different settings.[7] Although the GCS has been previously demonstrated to predict mortality, efficacy in prediction of functional outcome has not been established.[8] In our case GSC score returned to normal value of 15/15 before discharge. Also NCCT head and USG abdomen were normal.

As per Multi-Organizational Consensus Recommendations for India in traumatic brain injury:[9] criteria for admitting patients to hospital following a head injury includes deteriorating GCS, abnormal neurological signs, early post traumatic seizures, skull fracture, high risk mechanism of injury, patients whose GCS has not returned to 15 after imaging, regardless of the imaging results etc.

All patients with any degree of head injury should only be transferred to their home if it is certain that there is somebody suitable at home to supervise

Table 1: GCS Score

Score	1	2	3	4	5	6
Eye response	Do not open eyes	Open eyes in response to painful stimulus	Opens eyes in response to verbal command	Opens spontaneously		
Verbal response	Makes no sound	Incomprehensible sounds	Utters inappropriate words	Confused	Normal oriented conversation	
Motor response	Makes no movements	Extension to painful stimulus	Abnormal flexion to painful stimulus	Flexion/ withdrawal to painful stimulus	Localizes painful stimulus	Obeys commands

the patient or when the risk of late complications is deemed negligible.[9] The caretakers of those patients with mild trauma (conscious and stable) who are released from the hospital are frequently advised to rouse the patient several times during the next 12 to 24 hours to assess for worsening symptoms.[9]

It is not mandatory to admit a patient of head trauma with normal GCS score and no obvious investigatory and clinical findings unless there is no provision of his care being taken by his relatives or friends. He can be safely discharged with specific instructions to the care takers which were done in this case. Also all the guidelines were followed during treatment.

Conclusion

All cases of traumatic brain injury should be assessed cautiously using the set guidelines. The conventional belief that GCS is sole criteria for discharging or admitting a patient is also not true. Multi-Organizational Consensus Recommendations for India in traumatic brain injury has laid down the guidelines for systemic approach to a patient of traumatic brain injury which should be strictly adhered to increases the chances of saving the life of the patient as well as reducing medical negligence charges.

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