

A Case Report on Management of Subdural Hematoma

Kunal S. Balvir¹, Ms. Bhawana Dhanvij², Shital Telrandhe³, R. D. Wajgi⁴

1. Kunal S. Balvir · Florence Nightingale Training College of Nursing, Sawangi Meghe, Wardha, Maharashtra, Email: kunalbalvir521@gmail.com, MobileNo-9325105740

2. Ms. Bhawana Dhanvij, Nursing Tutor, Florence Nightingale Training College of Nursing
Sawangi (Meghe), Wardha; Email: dhanvijbhawna@gmail.com, MobileNo-8378025836

3. Shital Telrandhe, Research Consultant, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi (M), Wardha.

4. R. D. Wajgi, Dept. of Computer Technology, Yeshwantrao Chavan College of Engineering,
Nagpurwajgi.rakhi@gmail.com

Abstract:

Introduction: After aneurysmal subarachnoid haemorrhage, acute subdural hematoma (SDH) is a rare consequence. SDH has never been linked to an unruptured intracavernous aneurysm. The most serious sort of subdural hematoma is this one. Following a head injury, the symptoms are severe and appear quickly, which can take anywhere from minutes to hours. The pressure on the brain quickly rises as blood accumulates. If you are not diagnosed and treated as soon as possible, you will die., you may lose consciousness, become paralysed, or even die. A subdural haematoma is potentially fatal. A serious head injury that causes blood vessels to burst is a common cause. As Blood can pool as a result, putting pressure on the brain. The effects of age and blood thinning medications, and other factors all raise the risk. as well as alcohol consumption Symptoms such as After a brain injury, symptoms such as headache, confusion, vomiting, slurred speech, or coma may emerge immediately or weeks later. Symptoms of a subdural haematoma may or may not occur. **Main symptoms and Important clinical findings:** Because the lower-pressure veins involved bleed more slowly than arteries, the main symptoms of a subdural hematoma appear later than those of an epidural haemorrhage. Acute hematoma signs and symptoms can occur in minutes, if not seconds, but they can also take up to two weeks to appear. Chronic subdural hematomas normally take four to seven weeks to manifest symptoms. **The main diagnose, therapeutic intervention and outcomes:** A subdural hematoma (SDH) is a common neurosurgical condition that frequently necessitates surgery. It's a sort of intracranial haemorrhage that happens behind the dura (basically, an accumulation of the presence of blood on the brain's surface) and can be linked to other brain traumas. **Conclusion:** The complication of ruptured, large intracavernous aneurysms is acute SDH. The postulated mechanism for the development of SDH is cavernous sinus wall erosion caused by acute aneurysm expansion after thrombosis.

Keywords: Subdural Hematoma, Head injury.

Introduction:

A subdural hematoma is a blood clot outside the brain. The most prevalent cause is serious head injuries. A subdural hematoma can cause potentially fatal bleeding as well as increased brain pressure. Others require surgical drainage, while others come to a standstill and then dissipate. Blood gathers A subdural hematoma is a blood clot that forms between the layers of tissue that surround the brain.¹ The dura is the human body's outermost layer. In a subdural hematoma, bleeding occurs between the dura and the next layer, the arachnoid. The bleeding happens beneath the skull and outside the brain, rather than inside the brain. The brain, on the other hand, becomes overwhelmed as a result of blood pooling.² The symptoms

are caused by the pressure on the brain. A subdural hematoma can cause unconsciousness and death if the pressure inside the skull rises to dangerously high levels. Despite proper treatment, subdural hematoma has a high mortality rate. A midline displacement exceeding the thickness of the hematoma by 3 mm or more at the baseline CT predicted mortality in all cases in a study of patients with traumatic acute subdural hematoma.³ A blood clot outside the brain is known as a subdural hematoma. The most prevalent cause is serious head injuries. A subdural hematoma can cause potentially fatal bleeding as well as increased brain pressure. Others necessitate surgical drainage, while others come to a halt before dissipating. Blood collects between the layers of tissue that surround the brain, resulting in a subdural hematoma. The dura is the human body's outermost layer. In a subdural hematoma, bleeding occurs between the dura and the next layer, the arachnoid.⁴

The bleeding happens outside the brain and beneath the skull, rather than inside the brain. The brain, on the other hand, becomes overwhelmed as a result of blood pooling. The symptoms are caused by the pressure on the brain. If you're under a great deal of pressure.⁵

Others necessitate surgical drainage, while others come to a halt before dissipating. Blood gathers between the layers of tissue that surround the brain, causing a subdural hematoma. The dura is the outermost layer of the human body. Bleeding occurs between the dura and the next layer, the arachnoid, in a subdural hematoma.

The bleeding happens beneath the skull and outside the brain, rather than inside the brain. The brain, on the other hand, becomes overwhelmed when blood pools. The symptoms are caused by the pressure on the brain.⁶

Patient specific information:

A 28 years old patient was admitted by his wife with the chief complaint of chief complaint of decreased depth perception for the past two weeks. He described a film covering the inferior portion of his left eye that caused difficulty walking. He further noted seeing spots and diamond-shaped lights upon standing. His blood pressure is normal 120/80mmHg, pulse-103 BPM, patient was unconsciousness and disoriented. The patient's head was normal and atraumatic. Palpation of his head revealed no sensitivity, and palpation of his midline cervical spine revealed no tenderness. His left pupil was 3 mm in diameter and marginally reactive, while his right pupil was 5 mm in diameter and completely nonreactive. His extraocular motions appeared to be in good working order. He was wearing a cervical collar and had no cervical deformities. There were no malformations of the chest wall, and his chest was symmetric and susceptible to examination. Auscultation revealed that his lungs were clean and that his heart beat was erratic. His abdomen was soft, firm, and not bloated, and he could move all of his limbs. His left pupil was 3 mm in diameter and just slightly reactive, whilst his right pupil was 5 mm in diameter and utterly nonresponsive. strain and rip with any subdural haemorrhage, causing bloating.

Causes

A serious head injury is the most common cause of a subdural hematoma. Subdural hematomas are one of the deadliest types of brain injuries. The haemorrhage rapidly fills the brain area, squeezing the brain tissue. This frequently ends in brain injury, which can be fatal.

A slight head injury might also result in subdural hematomas. The bleeding is less intense and occurs more slowly. This form of subdural hematoma is common in seniors. Chronic subdural hematomas are a type of hematoma that might go undiagnosed for days or weeks.

Primary concern and symptoms of patient: On the 16th of June, 2021, the patient presented to the A V B R Hospital's OPD with the major complaint of loss of consciousness, discomfort, headache, dizziness, and disorientation.

Medical , family, and psychosocial history: Patient has no any past medical and surgical history. Patient belong to middle class, nuclear family .he was not mentally stable ,he was disoriented to date, time and place. Patient has a good relationship with his family members.

Relevant past intervention with outcome: Patient have no any past medical and surgical history.

Clinical findings:-Common physical examination findings of subdural hematoma include decreased level of consciousness, mental status abnormalities, abnormal gait, evidence of intracranial hypertension. Present case had bad psychosocial history, patients disoriented to date time, place. His body built is moderate and he was not maintained personal hygiene.

Timeline: The patient was admitted private hospital with chief complaints of disoriented that time patient general condition was poor, patient was referred to AVBRH Wardha for Further treatment. Patient visited in A V B R Hospital in OPD bases on date 16-06-2021 with chief complaint loss of consciousness, pain, Headache, Dizziness, Disorientation.

Diagnostic assessment: Diagnostic testing: He appeared pale, but he appeared to be in good health. He was unconscious but disoriented during a neurological evaluation. His cranial nerves and higher mental functions were unaffected. His sensory evaluation was unremarkable. However, due to pain and headache, the motor examination was distributed. **Diagnostic challenges :** Because the patient was unconscious, we faced numerous obstacles. Subdural Hematoma is the diagnosis. **Prognosis:** present case prognosis was satisfied

Therapeutic Interventions:

The most common therapy for the treatment of subdural haematomas form immediately after a serious damage to the head is a craniotomy (acute subdural haematomas). The surgeon makes a temporary flap in the skull during the procedure. Suction and irrigation are used to gently remove the haematoma, which is then rinsed away with fluid. Following the procedure, the portion of the skull is reinserted and fastened with metal plates or screws. This is normally done under a general anaesthetic, so you'll be unconscious for the procedure.

The most common therapy for subdural haematomas that appear over the course of days or weeks following a minor head injury is burr hole surgery (chronic subdural haematomas). One or more small holes in the skull are bored during the surgery, and a flexible rubber tubing is introduced to drain the haematoma. The tube may be left in place for a few days afterward to drain any blood and limit the risk of a recurrence of the haematoma. Burr hole Although surgery is normally done under general anaesthesia, it can also be done under local anaesthesia.

Change in therapeutic Intervention: No changes were reported in therapeutic Intervention

Follow-up and outcomes:

Clinical and patient assessed outcomes: The goal of this study was to look at the epidemiological characteristics and outcomes of subdural hematoma patients who were treated with this procedure.

Adverse and unanticipated events: No adverse events were noted.

Discussion:

Subdural hematomas are treated with a variety of therapy options are available. Patients are given a single treatment, or evacuation of numerous burr holes with or without external subdural drainage in the majority of cases. Twist-drill craniostomies and conventional craniotomies are two other options. Patients who have a recurring or persistent subdural hematoma may also benefit from peritoneal shunts since they can reduce the number of surgical treatments required. As a result, we feel that patients who have recurrent A subdural peritoneal shunt should be considered for patients with persistent collections or who are at high risk of mortality and/or recurrence.⁷ A subdural hematoma occurs when blood leaks from a broken artery into the space beneath the dura mater, the membrane that separates the brain from the skull. Some of the symptoms include a chronic headache, fatigue and disorientation, nausea and vomiting, slurred speech, and vision problems. Hematomas in the subdural area are potentially fatal. If you've had a head injury, see your doctor. A subdural hematoma (SDH) is a blood clot that develops beneath the inner layer of the dura mater but outside of the brain and arachnoid membrane (see the images below). A subdural hematoma is the most prevalent type of traumatic brain mass injury. Acute hematoma on the left side of the subdural space (SDH).⁸ Studies on related aspects were reviewed⁹⁻¹⁴.

Conclusion:

After the evacuation of a persistent subdural hematoma, the implantation of The use of a stable subdural peritoneal shunt is a safe, effective, and active therapy option for limiting blood collection. A hematoma in the subdural space is a type of internal bleed. It's a type of bleeding that happens inside the head's skull but not in the brain tissue. The brain has three membrane layers or coverings between the bone skull and the actual brain tissue (called meninges).

References:

1. Miller JD, Bullock R, Graham DI, Soustiel JF, Teasdale GM. Ischemic brain damage in a model of acute subdural hematoma. *Neurosurgery*. 1990 Sep 1;27(3):433-9.
2. Heimer L. *The human brain and spinal cord: functional neuroanatomy and dissection guide*. Springer Science & Business Media; 2012 Dec 6.
3. Bruce DA, Zimmerman RA. Shaken impact syndrome. *Pediatric annals*. 1989 Aug 1;18(8):482-94.
4. Pang D, Horton JA, Herron JM, Wilberger JE, Vries JK. Nonsurgical management of extradural hematomas in children. *Journal of neurosurgery*. 1983 Dec 1;59(6):958-71.

5. Ornstein RE, Sobel D. The healing brain: Breakthrough discoveries about how the brain keeps us healthy. ISHK; 1999.
6. Packet SL. Overview of adult traumatic brain injuries. Orlando Regional Healthcare, Education & Development, Orlando, FL. 2004.
7. Ducruet AF, Grobelny BT, Zacharia BE, Hickman ZL, DeRosa PL, Anderson K, Sussman E, Carpenter A, Connolly ES. The surgical management of chronic subdural hematoma. *Neurosurgical review*. 2012 Apr;35(2):155-69.
8. Guyer C, Ray JW. Head Injury. In *Sports-related Fractures, Dislocations and Trauma 2020* (pp. 731-751). Springer, Cham.
9. James, S.L., Castle, C.D., Dingels, Z.V., 2020a. Estimating global injuries morbidity and mortality: Methods and data used in the Global Burden of Disease 2017 study. *Injury Prevention* 26, 1125–1153. <https://doi.org/10.1136/injuryprev-2019-043531>
10. James, S.L., Castle, C.D., Dingels, Z.V., 2020b. Global injury morbidity and mortality from 1990 to 2017: Results from the global burden of disease study 2017. *Injury Prevention* 26, 196–1114. <https://doi.org/10.1136/injuryprev-2019-043494>
11. Sandhu, G.S., Nagrale, H.R., 2020. Computed Tomography Evaluation of Brain in Chronic Alcoholics. *Journal of Neurosciences in Rural Practice* 11, 63–71. <https://doi.org/10.1055/s-0039-1700610>
12. Shinde, P., Gupta, R., 2020. Optical coherence tomography-based monitoring of traumatic choroidal rupture and pneumatic displacement of submacular hemorrhage. *Journal of Datta Meghe Institute of Medical Sciences University* 15, 693–695. https://doi.org/10.4103/jdmimsu.jdmimsu_355_20
13. Pote, M., Phatak, S., Thakare, P., 2019. Computed tomographic evaluation of intracerebral hemorrhage. *Journal of Datta Meghe Institute of Medical Sciences University* 14, 179–182. https://doi.org/10.4103/jdmimsu.jdmimsu_75_19
14. Patond, S., Mohite, P., Ninave, S., Wankhade, P., Pande, V., 2019b. Age related changes in accidental contusion at tertiary care centre. *Indian Journal of Forensic Medicine and Toxicology* 13, 33–36. <https://doi.org/10.5958/0973-9130.2019.00257.3>