

## **Sudden Death due to Intraventricular Haemorrhage Masquerading as Alcohol Intoxication: A Case Report**

**Preet Inder Singh<sup>1\*</sup>, Dasari Harish, Amandeep Singh**

<sup>1</sup>*Demonstrator,*  
<sup>2</sup>*Professor & head,*  
<sup>3</sup>*Professor,*

*Department of Forensic Medicine & toxicology,  
Government Medical College & Hospital, Chandigarh*

*\* Corresponding author: planetinder@yahoo.co.in*

### **ABSTRACT**

Intraventricular Haemorrhage (IVH) is the haemorrhage which occurs in the ventricular system of the brain. Depending on the source of bleeding, IVH is divided into two types primary and secondary Intraventricular Haemorrhage. Mostly primary Intraventricular Haemorrhage is due to some pathological causes like degenerative changes in vessels, hypertension and tumours especially that of choroid plexus, rarely can occurs as sole cause of death due to direct injury to the cerebral vessels without any associated parenchymal haemorrhage. Here, i am reporting a case of sudden death due to PIVH. Patient was admitted at GMCH, Chandigarh with the alleged history of RSA while he was driving the vehicle hit and run over the person. Initially, he was arrested by the local police and was thought to be under the influence of alcohol/some drugs for which he was taken to local hospital for medical examination. But after some time he became unconscious thus he was referred to higher centre. He was admitted in medicine emergency in unconscious state, NCCT head showed haemorrhage in the ventricular system. On postmortem examination and macroscopically shows only IVH without any traumatic or any other intra parenchymal haemorrhage/injury. On further examination, it was confirmed that source of bleeding is due to ruptured anterior communicating artery.

This case puts light on the importance of detailed examination especially in cases where there is no external injury over the head but internally there can be fatal injury to brain parenchyma or vasculature.

**Key Words:** Postmortem examination, primary intraventricular haemorrhage, traumatic, sudden death.

## **INTRODUCTION:**

Intracranial haemorrhages are divided into many types as extradural, subdural, subarachnoid, intracerebral and intracranial haemorrhage depending upon the localisation of haemorrhage in the brain.<sup>1</sup> Intraventricular haemorrhage is the haemorrhage occurs in the ventricular system of the brain. Ventricular haemorrhage is mostly arterial.<sup>2</sup> They are of two types, 1) Primary IVH, which is very uncommon seen in 3% of the cases, bleeding limited to ventricular system only, mostly non traumatic causes like rupture of arteriovenous malformation or degenerative changes in the wall of ventricle, back flow of SAH into ventricular system, hypertension and tumours especially that of choroid plexus, rarely can occurs as sole cause of death due to direct injury to the cerebral vessels without any associated parenchymal haemorrhage.<sup>3</sup> 2) Secondary IVH, which is most common, always associated with other intracerebral haemorrhage which bleeds into the ventricular system.<sup>4</sup> If IVH is the only finding then it is due to result of crash of head with the stationary object, as in fall. Here, i am reporting the case of sudden death due to PIVH.

## **Case Report:**

An 26 years old young male, brought to the emergency with the alleged history of road side accident around 10.30 pm, while patient was in his four wheeler hit with some person crossing the road. He was arrested by the local police and was initially thought to be under the influence of alcohol or some drugs. Later, he was taken to Civil hospital for medical examination. During the examination, he became unconscious and was referred to higher centre for further management. (

On arrival, patient was unconscious, NCCT head was done which shows ventricular haemorrhage. He was managed conservatively and during the course of treatment he died within 6 hours of the admission. During Postmortem examination, externally there were no external injury mark were present. Internally, brain weight around 1250 grams, massive haemorrhage with clots was present in both lateral ventricle. Transtentorial herniation was also present. Viscera for chemical examination was also send, which was negative for alcohol and drugs. (Figure 1, 2 & 3)



**Figure 1**



**Figure 2**



**Figure 3**

**Discussion:**

All craniocerebral injuries are associated with the small amount of intraventricular haemorrhage. Only true ventricular haemorrhage. The clinical manifestations of PIVH are further divided into two types, 1) Sudden unconsciousness, nausea, vomiting, severe headache and brainstem dysfunction. 2) Progressive symptoms like increased intracranial pressure followed by headache, vomiting and loss of consciousness after few hours. The former symptoms are commonly considered as a typical PIVH. In this case, patient was admitted with sudden onset of headache and unconsciousness. On further, investigation showed IVH with no ICH. PIVH was made as a diagnosis of exclusion, after postmortem ruled out any traumatic brain injury.

**Conclusion**

Morphology and position of ventricular haemorrhage to be examined with serial section to avoid any misjudgement. CT/MRI reports should be acquired before giving the final opinion regarding cause of death. The intake of alcohol or any other drug should always be ruled out. Past medical history of the patient to be sought from the available records.

**Conflict of interest:** None

**Financial assistance:** None

## REFERENCES

1. Flint AC, Roebken A, Singh V. Primary intraventricular hemorrhage; yield of diagnostic angiography angiography and clinical outcome. Neurocrit Care. 2008;8(3):330-6.
2. Gordon A. Primary ventricular hemorrhage: further contribution to a characteristic symptoms group. Arch Neurol Psychiatry 1938;39(6):1272-6.
3. Passero S, Olivelli M, Reale F. Primary intraventricular hemorrhage in adults. Acta Neurol Scand 2002;105(2):115-9.
4. Zebian B, Critchley G. Spontaneous intraventricular haemorrhage. Surgery 2012;30(3):136-41.