

## STUDY OF INCIDENCE OF HEAD INJURIES WITH REFERENCE TO SUBDURAL HAEMORRHAGE

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### Abstract

**Introduction:** Head injury is a major public health and socioeconomic problem causing death and disability particularly among the young population throughout the world. Blunt head injury (injuries implicated in the scalp, skull, or brain caused by blunt outside force) is one of the most important and frequent mechanical injury and cause of death. It constitutes the top position in violence-incurring-death.

**Materials and Methods:** The present study has been carried out in the period between January 2023 to December 2023. The data collected from tertiary level medico legal autopsy centres in central coastal region of Andhra Pradesh between June 2015 to December 2017 on 128 cases containing cases of falls, vehicular accidents, blunt injuries to head. Data were collected from the police, relatives, and photographic evidences from the scene, post-mortem findings.

**Results:** 128 cases of subdural haemorrhages are studied. Around 100 cases (78.125%) are males and remaining 28 (21.875%) are females. That is, Subdural haemorrhage is more common in males than females in a ratio of 3:1.

**Conclusion:** Subdural haemorrhage is more common in males than in females. There are many explanations for this difference. Some of the reasons are more exposure to accidents in males as compared to females. But, others also exist such as more brain atrophic changes in males, greater size of brain volume in males. Also, the dimensions of cranium have significant effects on the incidence of subdural haemorrhage in males.

**Key Words:** Head injury, Subdural haemorrhage, scalp, skull, brain.

### INTRODUCTION

Head injury is a major public health and socioeconomic problem causing death and disability particularly among the young population throughout the world. Blunt head injury (injuries implicated in the scalp, skull, or brain caused by blunt outside force) is one of the most important and frequent mechanical injury and cause of death. It constitutes the top position in violence-incurring-death.<sup>1,2</sup>

Blunt head injuries are caused by impact and/or movement of the brain inside the skull. When the head is caused to move, either by direct impact to the head or by an action to the body (such as a collision with the body or by shaking the body), inertial movement of the brain within the cranial cavity occurs. A coup injury is defined as the injury occurring under the site of impact with an object, while a contrecoup injury is this occurring at the side opposite the impacted area. Coup and contrecoup injuries can occur individually or together.<sup>3</sup> When a moving object impacts upon a stationary head, coup injuries are typical, while contrecoup injuries have been described to be produced mainly when a moving head strikes a stationary object.<sup>3,4</sup>

A detailed history of past illness, and detailed autopsy may be the answer to various questions that often arise in case of death from head injuries. Haemorrhage resulting directly from trauma usually occurs over the surface of the brain, but deep-seated haemorrhage can also occur in the cerebrum, cerebellum or brain stem, due to trauma. The intracranial haemorrhage is usually with contusions or lacerations of the brain as coup or countercoup injuries. In an arteriosclerotic and hypertensive subject, emotional excitement or physical exertion may precipitate intracerebral haemorrhage; if such a person falls down with scalp injury, the haemorrhage may appear to be traumatic in origin.<sup>5</sup> The clinical significance of any space occupying lesion within the cranial cavity is the effect that the raised intracranial pressure caused has on brain structure and brain function. Blood that is collected in the cranial cavity compresses the brain and, if it continues for sufficient time, and in sufficient quantity, can raise the intracranial pressure and blood flow to the brain decreases and, if the pressure reaches the point where it equals or exceeds arterial blood pressure, the blood flow to the brain will cease. The Dura is strong and bluish connective tissue membrane and is firmly attached to the skull.

## MATERIALS AND METHODS

The present study has been carried out in the period between January 2023 to December 2023. The data collected from tertiary level medico legal autopsy centres in central coastal region of Andhra Pradesh between June 2015 to December 2017 on 128 cases containing cases of falls, vehicular accidents, blunt injuries to head. Data were collected from the police, relatives, and photographic evidences from the scene, post-mortem findings.

**Inclusion Criteria:** Head injuries cases with Subdural Haemorrhage.

**Exclusion Criteria:** Head injuries cases with other types of intracranial haemorrhages.

## RESULTS

128 cases of subdural haemorrhages are studied. Around 100 cases (78.125%) are males and remaining 28 (21.875%) are females. That is, Subdural haemorrhage is more common in males than females in a ratio of 3:1.

Gender	No. of Cases with Subdural Haemorrhage	Percentage
Males	100	78.12%
Females	28	21.87%
Total	128	100%

## DISCUSSION

Subdural Haematoma occurs due to rupture of bridging veins that pass through the subdural space. The rupture of veins occurs due to the tension created in their weak walls (as compared to arteries) by external trauma.<sup>6</sup> Subdural haematoma results in more pressure over the surface of the brain and also some substances are released when there is an injury which leads to further vasoconstriction which results in decreased blood supply to brain and leads to ischemia of brain. As all other organs, when the blood flow to brain is decreased, the brain cells suffers from lack of nutrition and also decreased disposal of wastes generated by cells which leads to brain cell death. This condition lead to higher risk of death for the patient.<sup>7</sup>

Subdural haematoma occurs in patients with less severe head injuries also, particularly those who are elderly or who are receiving anticoagulants. It may be spontaneous rupture of fragile blood vessels or bleeding or due to procedures done for laboratory diagnosis such as lumbar puncture.<sup>8</sup> Even with the best neurosurgical and medical care, the success of the treatment cannot be guaranteed, and rates of mortality and morbidity can be high. Subdural haematoma is classified based on the size, location (parietal or temporal, front parietal etc.), duration (Acute, sub-acute, chronic) since the bleeding started. The appearance of haematoma on computed tomography scan (CT Scan) determines the duration of bleeding, if the inciting event is not known.<sup>9</sup>

Overall the prognosis of the patient is not generalised but, it depends on the medical and neurologic conditions of the patient. These same factors also determine the treatment course and also determines the outcome of the treatment. Based on duration of bleeding and its appearance on CT scans.<sup>10</sup>

## CONCLUSION

Subdural haemorrhage is more common in males than in females. There are many explanations for this difference. Some of the reasons are more exposure to accidents in males as compared to females. But, others also exist such as more brain atrophic changes in males, greater size of brain volume in males. Also, the dimensions of cranium have significant effects on the incidence of subdural haemorrhage in males.

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