

## Chronic Subdural Hematoma in Elderly Patients after Trivial Head Injury

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### ABSTRACT

**Background:** Chronic subdural hematoma is a benign disease but its behavior is more than a malignant space occupying lesion intra-cranially and it kills patient, if diagnosis delayed. Chronic subdural hematoma is frequently associated with underlying co-morbidities like diabetes mellitus, hypertension, ischemic heart diseases and atrial fibrillation in elderly patient. Early recognition of chronic subdural hematoma is important for early management.

**Objective:** To identify the factors for causing chronic sub-dural haematoma following minor head injury.

**Materials and Methods:** This observational descriptive study was conducted in the Department of Neurosurgery “A” Unit, Lady Reading Hospital Peshawar from 1<sup>st</sup> January 2016 to 31<sup>st</sup> July 2018. All patients with history of minor head injury resulting in unilateral or bilateral chronic subdural hematoma diagnosed clinically and radiologically by CT scan/MRI brain, Age greater than 60 years & operated for chronic subdural hematoma were included in this study. Exclusion criteria was all chronic subdural hematoma patients with age less than 60 years and previous operated. Medical records of patients were revised and searched for associated risk factors. A proforma was designed for collection of data. The data was analyzed through SPSS Version 17.

**Results:** Total number of patients were (46) with male to female ratio (3:1). Clinical presentations were decreased level of consciousness in 11 patients (23.9%), Headache in 10 patients (21.7%), Memory loss in 5 (10.8%), Personality changes in 10 patients (21.7%), Motor deficits in 5 patients (10.8%), Aphasia in 5 patients (10.8%). The risk factors found were Diabetes Mellitus 8 cases (17%), Hypertension 16 cases (35%), Rheumatic heart disease 1 case (3%), Ischemic heart disease 15 cases (32%) and atrial fibrillation 6 cases (13%).

**Conclusion:** The common risk factors for chronic subdural hematoma was ischemic heart disease, hypertension, diabetes mellitus and atrial fibrillation. Early management results in favorable prognosis in terms of morbidity and mortality.

**Keywords:** Chronic subdural hematoma, risk factors.

### INTRODUCTION

Chronic subdural hematoma is one the common cause of morbidity and mortality in elderly population with estimated prevalence of 13/100000 people. It is a benign disease but its behavior is more than a malignant space occupying lesion intra-cranially and it kills patient, if diagnosis delayed.<sup>1,2,3</sup> The majority of the neurosurgical literature concerning this disease is devoted to various methods of acute treatment. Initially craniotomy was favored, but over time this has been supplanted by less invasive techniques of

burr hole drainage. Chronic subdural hematoma is frequently associated with underlying risk factors like ischemic heart disease, hypertension, diabetes mellitus and atrial fibrillation in elderly patients.<sup>4,5,6</sup>

Clinical Manifestations of chronic subdural hematoma are nonspecific and subtle. Being the era of CT brain, although diagnosis of chronic subdural hematoma has been improved, still elderly patients with chronic subdural hematoma after trivial head injury are missed because of the non-focal neurological deficits. Elderly Patients with chronic

subdural hematoma may present with decreased level of consciousness, headache, memory loss, personality changes, motor deficits and aphasia.<sup>7,8,9</sup> Findings of this study could be used for identifying high risk elderly patients for developing chronic subdural hematoma after trivial head injury.

## METHODOLOGY

Our study was a descriptive and conducted at LRH Peshawar, Neurosurgery unit from 1<sup>st</sup> January 2016 to 31<sup>st</sup> July 2018. The diagnosis was made clinically and confirmed by CT scan brain and type of chronic subdural hematoma was classified on the basis of density of blood with reference to brain parenchyma. Chronic subdural hematoma was defined through CT Brain when the blood is hypodense as compared to brain parenchyma. Clot volume was calculated through Peterson formula. Head trauma with no hematoma in the brain at time of injury was called trivial head trauma. All patients were subjected to single burr-hole drainage of chronic subdural hematoma with a Foleys catheter left in situ for 24 to 48hrs and CT Brain improvement regarding collection. Patients were reviewed after one month by clinical examination and doing CT Brain. All patients with history of minor head injury resulting in unilateral or bilateral chronic subdural hematoma diagnosed clinically and radiologically (CT/MRI brain), Age greater than 60 years & operated for chronic subdural hematoma were included in this study. Exclusion criteria were all chronic subdural hematoma patients with age less than 60 years, or treated conservatively. Medical records of patients were revised and searched for associated risk factors. A proforma was designed for collection of data and statistically analysis done through software.

## RESULTS

Total number of patients were 46 documented from January 2016 to January 2017. Out of which males were 33 (72%) and females were 13 (28%) with male to female ratio (3:1). Out of total patients, (75%) presented with symptoms within 1st month and (25%) presented after 1st month of trivial trauma.

The common clinical presentations was decreased level of consciousness. The details are giving in Table 1.

Unilateral chronic subdural hematoma was found in 37 cases (80%) and bilateral chronic subdural

**Table 1:** *Clinical presentation of patients with chronic subdural hematoma.*

Clinical Presentation	Number of Patients	Percentage
Decreased level of consciousness	11	23.91
Headache	10	21.73
Personality changes	5	21.73
Memory loss	10	10.86
Aphasia	5	10.86
Motor deficits	5	10.86

hematoma was found in 9 cases (20%).

The common risk factor was hypertension 16 cases (34.7%). The details is giving in Table 2.

**Table 2:** *Risk Factors.*

Risk Factors	Number of Patients	Percentages
Hypertension	16	34.7
Ischemic heart disease	15	32.6
Diabetes mellitus	8	17.3
Atrial fibrillation	6	13.04
Rheumatic heart disease	1	2.17

## DISCUSSION

Chronic subdural hematoma is considered due to trauma but records of trauma is present in 50% of patients. Many subdural hematoma begins as an acute hematoma and then starts as complex mechanism of inflammation, enzyme fibrin lysis, new blood vessel formation and blood clot lysis to form chronic subdural hematoma. Chronic subdural hematoma with midline shift with presentation of headache, vomiting and neurological deficit should be operated in emergency for low complications and death rate.<sup>8,9,6,8,10</sup>

This take a look at is regular with preceding research displaying that chronic subdural hematoma is a disease of 50 years plus age. Chronic subdural hematoma is mostly occurred in old age people with comorbidities after a minor head damage.<sup>4,6,11,12</sup> The comorbidities and using non steroid anti inflammatory

medications are the main culprit of chronic subdural hematoma<sup>7</sup>. Chronic subdural hematoma is mostly a presentation of other chronic diseases. Jones conducted a study in which total mortality was 31% but only 6% of patients having only chronic subdural hematoma without other chronic illness.<sup>11,13,14</sup>

In our study the common risk factor was hypertension in 34.7% patients, while ischemic heart disease in 32.6%, diabetes mellitus in 17.3% and atrial fibrillation in 13.04% patients. Berghauser P also presents the same sequences of risk factors in his study.<sup>3</sup>

The mortality rate of 16.7% more than the literature mentioned mortality rate of 0-15%, which could be attributed to late referral of patients to neurosurgical emergency services.<sup>8,9,13</sup>

## CONCLUSION

The common risk factors for chronic subdural hematoma was ischemic heart disease, hypertension, diabetes mellitus and atrial fibrillation. Early management results in favorable prognosis.

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