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# Diagnosis and management of chronic subdural haematoma-A 10 years study in Medical College Hospital, Bikaner

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## Abstract

**Background :** Chronic subdural haematoma is an accumulation of old blood in between the duramater and arachnoid mater surrounding the brain. SDH results from dissection of blood into the potential space between dura and arachnoid. It results most often from rupture of veins which cross the convexities of cerebral hemispheres.

**Methods:** This research work is based on study of 252 cases of chronic subdural haematoma who underwent treatment in the Neurosurgery Department of PBM and A.G of Hospitals, Bikaner in the 10 years period of 2010 to 2020.History taking and diagnostic investigations were done. The patients underwent conservative treatment followed by surgery burr hole with suction-evacuation, craniotomy or craniectomy with excision of membrane, depending upon the case.

Results: 78%of patients had a favorable outcome. Complications were seen in 13.08% cases and mortality in 8,33%cases. The results of surgical treatment of chronic subdural haematoma were found to be good with low mortality and morbidity in our study group.

**Keywords:** Ch SDH: Chronic subdural haematoma, CT: Computed tomography, MRI: Magnetic resonance imaging, HI: Head Injury

## Introduction

Chronic SDH was first described by Virchow in 1857 as pachymeningitis haemorrhagica internal. According to the time of onset of symptoms after head injury, the subdural haematoma is classified into 3 types- acute subdural haematoma within 48 to 72 hours, sub-acute in 3to 20 days and chronic:3 weeks to several months after HI. Chronic SDH often occurs in the elderly after trivial injury without any damage to the underlying brain. Fogalhalm and Waltimo estimated an incidence of 1.72 per 100,000 per year.[1]

The patients commonly present with altered mental state in old age group- in 50-70% of cases. It may manifest as varying degrees of confusion, drowsiness or coma. The patients may present with focal neurological deficit. Young patients may present with headache and

seizures. The patients may present with transient neurological deficits in 1-12% of cases. The most common symptoms are disturbance in language, hemiplegia and hemi sensory deficit. There may be atypical symptoms like vertigo, nystagamus extrapyramidal syndromes or progressive quadriparesies. In any patient presenting with a change in mental status or a worsening of pre-existing neurological illness, psychological illness, focal neurological deficit or headache ,investigations including CT scan of head should be done to exclude ChSDH.

**Material and Methods**

The present study has been conducted in Department of Neurosurgery, S.P. Medical College and Associated Group of Hospitals, Bikaner. The study consisted of 252 cases of Ch SDH admitted in the Neurosurgery Department over period of 10 years (2010 to 2020). The patients in study group were subjected to detailed history taking, physical examination, hematological, biochemical and radiological examination Plain CT scan head and later on MRI were done. Based on clinical features and investigations, the patients were managed medically and later surgical procedures were done. Surgical procedures included burr hole with suction- evacuation, craniotomy, multiple aspirations and craniectomy with excision of membrane, depending upon the case..

**Results**

Table 1: Age wise distribution of cases

| Age group | No of cases | Percentage |
|---|---|---|
| 0-20 years | 9 | 3.57% |
| 21-40 years | 46 | 18.52% |
| 41-60 years | 91 | 36.11% |
| 61-80 years | 92 | 36.51% |
| >80 years | 14 | 5.56% |
| Total | 252 | 100.00% |

Out of the 252 cases, maximum cases (36.5%) were from 61-80 years age group and minimum cases (3.57%) were from 0-20 year's age group.

Table 2: Gender wise distribution of cases

| Gender | No of cases | Percentage |
|---|---|---|
| Male | 215 | 85.32% |
| Female | 37 | 14.68% |
| Total | 252 | 100.00 |

Out of the 252 cases, 85.32% were male and 14.68% were female.

Table 3: Gender wise distribution of cases in different age groups

| Age group | Gender | | Total |
|---|---|---|---|
| | Male | Female | |
| 0-20 years | 8 | 1 | 9 |
| 21-40 years | 42 | 4 | 46 |
| 41-60 years | 77 | 14 | 91 |
| 61-80 years | 78 | 14 | 92 |
| >80 years | 10 | 4 | 14 |
| Total | 215 | 37 | 252 |

Above table depicts that in each age group males were more frequently affected as compared to females.

Table 4: Location wise distribution of cases in different age groups

| Location | No of cases | Percentage |
|---|---|---|
| Unilateral right | 134 | 53.17% |
| Unilateral left | 97 | 38.49% |
| Bilateral chronic SDH | 21 | 8.33% |

As depicted in table no 4, unilateral ChSDH was found in 91.67%of cases where as bilateral ChSDH was found in 8.33% of the study group.

Table 5: Showing distribution of cases according to cause of Chronic SDH

| Cause | No of cases | Percentage |
|---|---|---|
| Severe head injury | 146 | 57.94% |
| Trivial head injury | 88 | 34.92% |
| Spontaneous chronic SDH | 6 | 2.38% |
| Medical cause | 12 | 4.76% |

The table no 5 shows that maximum number of ChSDH were caused by head injury .ChSDH due to medical disease was encountered in 4.76% and spontaneous ChSDH was found in 2.38% cases

Table 6: Distribution of cases according to the operative procedure done

| Operative procedure | No of cases | Percentage |
|---|---|---|
| Burr hole with suction evacuation | 218 | 86.51% |
| Burr hole with suction evacuation with drain tube | 22 | 8.73% |
| Multiple Aspirations | 10 | 3.97% |
| Craniectomy with excision of membrane | 2 | 0.79% |

86.51% patients operated by burr hole with suction evacuation

Table 7: Distribution of cases according to complications

| Type of complication | No of cases | Percentage |
|---|---|---|
| Recurrence | 12 | 4.76% |
| Seizure | 16 | 6.34% |
| Tension pneumocephalous | 5 | 1.98% |
| Death | 21 | 8.33% |

4.76% patients present with recurrence

**Discussion**

Subdural haematoma is a collection of blood outside the brain in the subdural space. It is usually caused by serious head injury. It may also result from trivial HI. Non-traumatic causes of ChSDH include anticoagulant therapy, bleeding diathesis, blood dyscrasias[2] and dural metastasis. [3] In infants and children, infection as well as dehydration leading to hypernatremia may result in SDH.[4,5] Bleeding and added pressure in the brain from a subdural haematoma can be life threatening. Symptoms of subdural haematoma depend mostly on the rate of bleeding. Symptoms may be headache, confusion, change in behaviour, dizziness, weakness, apathy, and seizures. ChSDH may be diagnosed by CT scan head and MRI brain. MRI is slightly superior to CT scan in detecting subdural haematoma but CT is faster and more readily available. The treatment of SDH depends on its severity. Treatment can range from watchful waiting to brain surgery. Surgeon can use various techniques to treat ChSDH-

1 Burr hole trephination

2 Burr hole with suction and evacuation

3 Burr hole with suction, evacuation and drain tube

4 Craniectomy with excision of membrane

Treatment of ChSDH is by surgical evacuation. Although small haematomas may resolve spontaneously.[6,7] patients treated conservatively should be carefully monitored and the CT scan should be repeated if there is clinical deterioration. The commonly followed surgical procedure is burr hole and suction evacuation of ChSDH. This procedure has low mortality rate and duration of hospital stay is less. However, in older age group patients with brain atrophy, chances of recurrence are high with this procedure. So we performed the Burr hole with suction, evacuation and drain tube in 22 cases. We found that

patients had low mortality rate, duration of hospital stay was reduced, tension pneumocephalous was less and brain expansion was good. Craniectomy was done in 2 cases in which recollection of ChSDH with solid components was there. In this procedure, the membrane was excised and there was good recovery.

Complications

The usual postoperative complications are infection and inappropriate secretion of anti-diuretic hormone. Reaccumulation of the haematoma is the most common postoperative problem. Residual fluid can be detected on CT scan, but majority of the patients are asymptomatic and residual fluid is clinically insignificant. Symptomatic recurrence was noted in 8% to 37% by Feldman et al.[8] In our series recurrence rate was 4.76%. Around 11% of patients develop seizures after surgery. Patients should be recommended anticonvulsant for at least 6 months. [9] In our series 6.3% of cases were having seizures and treated with anticonvulsant. Tension pneumocephalous is a rare postoperative complication. The clinically compressed brain is thought to contribute to the ingestion of intracranial air. The slow re-expansion of the brain and trapped subdural air leading to increase in intracranial pressure and thus neurological deterioration was found in 8% of cases by Sharma et al.[10] In our study it was found only 1.98% of the patients.

The morbidity and mortality in ChSDH varies widely in the literature. The overall in- hospital mortality was found to be 15.6% in a large series of 157 patients by Rozzelle CZ et al.[11] In our series of 252 cases over a period of 10 years mortality rate was 8.33%.

Neurological status at the time of diagnosis is the most significant prognostic factor. The influence of age on the morbidity and mortality is controversial and serial studies have shown no relationship with age.[12]

**Conclusions**

From this study it can be concluded that the investigation of choice for the diagnosis of ChSDH is CT scan of head, supplemented if needed ,by MRI brain. Surgical treatment of ChSDH is safe and can be positively recommended even for elderly patients with brain atrophy and for patients with pre-existing neurological comorbidities.

**References**


1. Fugelhalm R,Heiskanen O,Waltimo O. Chronic subdural haematoma in adults; influence of patients age on symptoms, sign and thickness of haematoma J.Neurosurg1975;42:43-6
2. Isfort A:Bilateral traumatic subdural hematoma in a child suffering from haemophilia.Neurochirurgie 28:155,1967.
3. BergmannM,Puskas Z,KuchelmersterK:Subdural hematoma due to dural metastasis:case report and review of literature.Clin NeurolNeurosurg 94:235,1992.
4. Clement JC,Forthomme J,Fleury J et al :Aetiological circumstances and anatomical particularities of chronic subdural hematomas of infants.Gaz Med Fr 75:4713,1968.
5. NeimannM,Manciauz M,Sapelier J et al: Chronic subdural hematoma of infancy.Considerations on the etiology.Pediatrics 21:409,1966.
6. Nsganuma H,Fukamachi A Kawaskami M et al; Spontaneous resolution of chronic subdural haematoma: Neurosurg 1986; 19:794-8
7. Jones S, Kafetz K Aprorpective study of chronic subdural haematoma in elderly patients. Age Aging 1999;28; 519-21
8. Feldman Rh, Pincus JH,Mceniee WJ.Cereberovascular accident or subdural fluid collection. Arch intern med 1963;112:966-76

9. ComeranMM,chronic subdural haematoma a review of 114 cases J.Neurol Neurosurg pschietry;1978: 730-6
10. Sharma B.S.,Tewari MK,.Khosla VK et al Tension pneumocephalous following evacuation of chronic subdural haematoma.Br J Neurosurg1989;3:381-387
11. Rozzelle C Z .Welford J L. Brnch CL preditors of hospital mortality in older patient with subdurah haematoma J Am Geriatr sac 1`995;43:40-4
12. Ellis G L Subdural haematoma in the elderly; Emerg Med Clin North Am 1990;8:281-294