

EFFECT OF SUBGALEAL DRAIN IN THE MANAGEMENT OF CHRONIC SUBDURAL HAEMATOMA THROUGH BURRHOLE EVACUATION

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Abstract:

Background: Over a period of two year since January 2005 to December 2006, 70 case of chronic subdural haematoma seen and treated.

Description: A male preponderance among the cases was seen in a ratio of 6:1. The condition presented with various manifestations. All cases are diagnosed by CT Scan of head. These cases have been managed by burrhole evacuations with or without putting subgaleal drain.

Conclusion: This procedure has resulted in marked reduction of recurrence and morbidity. There have been 3 death between to group ;the mortality rate in group a 5.75 in group b 2.9%.

Key words: chronic subdural haematoma, Evacuations drainages.

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Introduction:

As early as 1656 J.J Wefer reported a case of chronic subdural haematoma since then many reports have been appeared in the literature. This condition is considered to be Neurosurgically treatable, providing gratifying results.

Materials and Method:

Since January 2005 to December 2006 70 patients were admitted in Neurosurgery department in Dhaka Medical College Hospital who were diagnosed as chronic subdural haematoma in non contrast CT Scan of head. They were divided into two group. purposively in group –A and group-B. in group-A 1st and alternate cases were operated with drain and in group-B Second and alternate cases were operated without putting subgaleal drain . Trauma was accounted about group-A 85.7 percent. and in group- B 82.86 percent. All patients with chronic subdural haematoma were referred from all parts of the country. This accounts the large number of chronic subdural haematoma cases treated at this Medical College Hospital.

Table 1 & II show the age and sex incidence of the cases. A high percentage patient were in their 6th decade or ;atom. The male to Female ratio in this group 6:1. The male preponderance is due to greater

exposure. Clinical presentation are shown in table 3. A definite history of head injury could be obtain in group-A 85.7 percents and group-B 82.86 percent and the remaining the patients could not remember any episode of trauma. It is note worthy in group-A 22.86 percent and group-B 20 percent of the cases had Bilateral chronic subdural haematoma. In Group-A 6 patient and in group –B 5 patient presented with refractory headache with period of remission and exacerbation the headache increased as assuming an upright position from prone position. Because of the symptoms the patients were afraid to sit or stand up.

Management:

70 patients of both group under went surgical intervention after proper preoperative evaluation through unilateral or bi lateral burr hole evacuation and irrigation the cavity by normal saline till clear fluid came out with or without putting subgaleal drain. Before closure or putting drain the subdural spaces were filled with normal saline. The subgaleal drain left for 24 hours then removed. The patient mobilized as soon as possible with physiotherapy. In 80 percents of cases deficit began to resolute within 48 hours. Scalp suture removed on the 7th post operative day and discharged home 7th or 8 post operative day.

Result:

All 70 patients in both group of chronic subdural haematoma were treated by burrhole evacuation and subdural space irrigated thorough normal saline. putting

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subgaleal drain in group-A and without subgaleal drain in group-B. After surgical evacuation most of the patients in both groups improved dramatically according to GCS, Markwalder scale and GOS.

Operative morbidity in group-A 6 (22.93 %) and group-B 1 (2.95 %) were noted out of 70 patients operative mortality in group-A 2 (5.7%) and group-B 1 (2.95 %) were noted.

Table-I

Age distribution in group a and in group-B. (n=70)

Age (year)	Group		Total
	Group A	Group B	
	(n=35)	(n=35)	
15-30	4 (11.4)#	2(5.7)	6 (8.6)
31-45	4(11.4)	7(20.0)	11 (18.0)
46-60	8 (22.9)	10 (28.6)	18 (25.7)
61-75	12 (34.3)	13 (37.1)	25 (35.7)]
76-90	7(20.0)	3 (8.6)	10 (14.3)
Total	35 (100.0)	35 (100.0)	70 (100.0)
Mean age	58.71±2.95	56.14 ±2.66	57.43±1.98
±SE (Range)	(18-88)	(22-90)	(18-90)*

Figure within parentheses denoted corresponding percentage

Out of 70 patients with CSDHs male patients were group A 28 (80.00%), group B 29 (82.90%) and female patients in group A 7 (20.00%) and group B 6 (17.1%)

Table-II

Sex distribution in group A and in group B. (n = 70)

Sex	Group		Total
	Group A	Group B	
	(n=35)	(n=35)	
Male	28 (80.0)#	29 (82.9)	57 (81.4)
Female	7 (20.0)	6(17.1)	13 (18.8)
Total	35 (100.0)	35 (100.0)	70 (100.0)

Figure within parentheses denoted corresponding percentage Male were mostly affected in both groups.

Out of 70 patients with CSDHs in both groups most of the patients presented with headache and contralateral limb weakness.

Table-III

Shows distribution of Clinical Presentation in group A and in group B. (D = 70)

Symptoms & Sign	Group		Total
	Group A (n=35)	Group B (n=35)	
Headache	6 (17.14)#	5 (14.29)	11 (15.71)
Headache plus vomiting	5 (14.29)	6 (17.14)	1] (15.71)
Headache plus contralateral limb weakness	20(57.14)	18 (51.43)	38 (54.20)
Behavioral disturbance	2 (5.71)	2(5.71)	4(5.72)
Speech disorder	1 (2.86)	3 (8.57)	4 (5.72)
Seizure	1 (2.86)	1 (2.86)	2(2.86)
Total	35 (100.0)	35 (100.0)	70 (100.0)

Figure within parentheses denoted corresponding percentage

Out of 70 patients with CSDHs, in groupAfronto, parietal 5(14.28%), parieto-occipital 22 (62.86%), fronto parieto-occipital (Bilateral) 8 (22.86%) and in group B Fronto parietal 6(17.14%), Parieto-occipital 22(62.86%), Fronto Parieto-occipital (Bilateral) 7 (24%).

Table-IV

Shows Location of CSDHs in group A and in group B. (n=70)

Location of haematoma	Group		Total
	Group A (n=35)	Group B (n=35)	
Fronto parietal	5 (14.28)#	6 (17.14)	11 (15.71)
Parieto-occipital	22 (62.86)	22(62.086)	44 (62.86)
Fronto Parieto occipital (Bilateral)	8 (22.86)	7(20.000)	15 (21.43)
Total	35 (100.0)	35 (100.0)	70 (100.0)

#Figure within parentheses denoted corresponding percentage

Table-V

Shows number and percentage of patients on the 1st postoperative day in group A and in group B according to GCS. (n=70)

Post operative GCS	Group		Total
	Group A (n=35)	Group B (n=35)	
5-Mar	2 (5.7)	1 (2.9)	3 (4.3)
8-Jun	2 (5.7)#	1 (2.9)	3 (4.3)
12-Sep	6(17.1)	6 (17.1)	12 (17.1)
13-15	25(71.04)	27 (77.1)	52 (74.3)
Total	35 (100.0)	35 (100.0)	70 (100.0)

Chi square value=0.744, df=3, p value= 0.863

#Figure within parentheses denoted corresponding percentage

Out of 70 patients with CSDHs, most of the patients were in grade 0 in both groups.

Table- VI

1st Postoperative day grading of CSDHs in group A and group B according to Markwalder scale. (n=70)

Markwalder Scale (Post operative period)	Group		Total
	Group A (n=35)	Group B (n=35)	
Grade 0	24 (68.6) #	26 (74.3)	50 (71.4)
Grade 1	6 (17.1)	7 (20.0)	13 (18.6)
Grade 2	3(8.6)	1 (2.9)	4(5.07)
Grade 3	2(5.7)	1 (2.9)	3(4.3)
Total	35 (100.0)	35 (100.0)	70 (100.0)

Chi square value=1.49, df=3, p value= U.685,

#Figure within parentheses denoted corresponding percentage

Out of 70 patients with CSDHs, in group A Death 2 (5.7 %) and group B Death 1(2.9%).

Table- VII

Shows post operative complication in group A and in group B. (n = 67) among 70 patients

Complications	Group		Total
	Group A (n=33)	Group B (n=34)	
Complication	6(22.9) 1	(2.95)	7(10.44)
No complication	27 (77.1)	33 (97.05)	60(89.56)
Total	33 (100.0)	34 (100.0)	67 (100.0)

Chi square value--3.72, df=1, p value= 0.05 (after Yates correction) #Figure within parentheses denoted corresponding percentage

Table-VIII

Showing condition of (both Groups) patients with CSDHs in relation to Glasgow outcome scale. (n = 70)

GOS	Group		Total
	Group A (n=35)	Group B (n=35)	
Grade 1	2 (5.?) #	1 (2.9)	3 (4.3)
Grade 4	8(22.9)	0 (.0)	8 (11.4)
Grade 5	25 (71.4)	34 (97.1)	59 (84.3)
Total	35 (100.0)	35 (100.0)	70 (100.0)

Chi square value=9.706, df=3, p value= 0.008. So result of our study is statistically significant.

#Figure within parentheses denoted corresponding percentage

Discussion:

CSDHs is a neurosurgical emergency which makes the surgeon worried with its malignant behavior. High morbidity and mortality of the patients following CSDHs has led to search for better treatment modalities their surgical treatment to improve the prognosis of the patients.

In this study, we have selected 70 consecutive patients of CSDH. These 70 patients grouped into group-A and group-B. 35 patients were in each group.

Group-A Management of CSDH after burrhole evacuation with subgaleal drain.

History of direct head trauma is frequently encounter risk factor. However, CSDHs may also occur in absence of head trauma. In our series direct head trauma was the most common cause of CSDHs 85.71% , in group-A and 82.86, in group-B and remained unclear 14.29% in group-A and 15.71% in group-B. In a relevant study the percentage of CSDHs with a history recent head trauma is 55% and caused is unclear in 20% (Krupp and Jans 1995) which correlates with our study.

The operative morbidity in group-a was (18.18) and in group-B was 2.95%. The operative morbidity in relevant study show 4.2% and 3.8% (Kurpp and Jans 1995) which correlates with our study.

In our study highest number of patients were in the active period of life in group-A 71.4% patient were in GOS 5 and in group-B, 97. 10% patients were in Gos 5 Category (Kurpp and Jans 1995) which correlates with our study. In our study we compared group-A with group-B relation to GOS during 1st postoperative day using chi square value=9.706. df=3, p value= 0.008. So result of our study is statistically significant.

We conclude therefore that burr hole evacuation without closed system drainage should be the method of choice for the treatment of CSDH. Craniotomy should be reserved for those patients in whom the haematoma reaccumulates or residual haematoma membranes prevent re-expansion of the brain.

Conclusion:

The present study show the result of management of CSDHs by surgical intervention e.g. burrhole evacuation with or without subgaleal drainage system. In our study we found burrhole evacuation without subgaleal drainage is better procedure than of drainage system. The patients with subgaleal drainage group had complications in postoperative period like wound infections, neurological deterioration, even death which were less in group without subgaleal drainage system.

According to the all outcome variable like GCS, GOS and Markwalder scale shows in group-B is better procedure which was statistically significant.

Thus in the management of chronic subdural haematoma by burrhole evacuation without subgaleal drainage system is a better procedure.

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