

Acute Traumatic Subdural Hematoma in the Elderly and Associated Factors That May Influence Chronicity

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Background:

Traumatic Acute Subdural Hematomas (TASDH) is by far the most common traumatic brain injury in adult patients with blunt trauma, who presented to the Emergency Department (ED). One of the serious sequale of TASDH is the development of Chronic Subdural Hematomas (CSD) with associated deterioration in mental status and convulsion

Methods:

A retrospective analysis conducted of 710 patients with TASDH who presented to the ED between 2015-2021. The data collected included age, sex, race, length of stay, CT findings, comorbid conditions, Glasgow coma scale, anticoagulation use prior to admission and at discharge, mortality, mode of injury, surgery, point of discharge and readmission within three months. Data on those readmitted (group A) were collected and compared to those who were not readmitted (group B). Statistical analysis used included student's t-test, Chi-square, and multiple logistic regression analysis to identify common confounding risk factors associated with readmission. Institutional Review Board approval was obtained prior to conducting the study.

Results:

There were a total of 710 patients admitted with TASDH between 2015 to 2021. Data available on 465 patients and they had a mean age of 71 ±19 years, 265 (57%) patients were male and 200 (43%) were female. All the patients had TASDH on presentation to the ED and 65 (15%) had an additional diagnosis of subarachnoid hemorrhage and 27 (6%) patients had intracranial hemorrhage.

	group A n=21	group B n=443	p-value
Age (mean ± SD) years	77.3 ± 11.53	70.99 ± 9.33	0.17
Sex (n%)			
male	9 (43%)	255 (58%)	0.2
female	12 (57%)	188 (42%)	
Race (n%)			
Caucasian	20 (95%)		0.95
others	1 (4.5%)		
Mean LOS days on first admission (mean ± SD) days			
ICU	2.6 (± 1.92)	3.59 (±3.75)	0.3
Hospital	6.43 (± 8.52)	5.36 (±6.01)	0.4
Disposition on initial discharge (n,%)			
home	10 (48%)	146 (33%)	0.04
nursing home	8 (38%)	186 (42%)	
other facilities	3 (14%)	31 (7%)	
★Comorbid Conditions (n, %)			
Cerebrovascular disease	4 (19%)	32 (7%)	0.07
Cardiovascular disease	11 (52%)	20 (46%)	0.6
Diabetes Mellitus	7 (33%)	99 (22%)	0.2
Hypertension	16 (76%)	296 (67%)	0.4
Renal Disease	3 (14%)	64 (14%)	0.9
Surgery on first admission (n, %)			
	3 (14%)	58 (13%)	0.7
GCS on first admission (mean ± SD)	14 (± 2.08)	13 (± 3.38)	0.2
Anticoagulant (including antiplatelet) on readmission (n %)	6 (29%)		

Table (1)

Comparison of data between group A (patients who were readmitted within two months) and group B (patients who were not readmitted)

- ★ Patients may have multiple comorbid conditions
- + 80 patients died before discharge during first admission

Discussion:

Age and history of cerebrovascular accidents including transient ischemic attack were independent predictors of readmission both of which approached significance, p=0.08 and p=0.09, respectively. We measured the size of the acute subdural hematoma in those who developed chronicity and found that all except two had a ≥ 6mm (maximum 21mm) with a midline shift and multiple bleeds. Also, five of the 21 patients had a bleed in the tentorium or falx cerebri.

Conclusion:

Factors favoring the development of trauma CSD in patients presented with TASDH are elderly patients with a history of cerebrovascular accident including transient ischemic attack, size, location, and multiplicity of the acute hematoma are more likely to be associated with chronicity.

References

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