



Outcome of acute and chronic subdural hematomas in patient 90 years and older.

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Introduction

The **American population above 65 years of age will have doubled** by 2050 and more nonagenarians will present to neurosurgeons for treatment. Hospital providers and relatives of patients often choose treatment even with little change of recovery.

Chronic Subdural hematomas (SDH) are common and present a significant health concern for the elderly.(1) Chronic SDH are often a **sentinel health event** for them leading to an overall decline in health. Dumont et al. found that mortality after diagnosis is increased with higher age at presentation.(2)

With increasing incidence of chronic SDH from 20/100.00 in the 70-79 year old group to 127/100.000 in the over 80 year old group health care consumption is increasing **without clear evidence that management strategies are leading to improved outcome.**(3)

Data on morbidity and mortality of chronic SDH in the elderly have been published before. Worse outcome is reported in patients 65 years and older. However the age cut of 65 years of age is unrealistically low. **We investigate outcome in the very elderly, age 90 year and above.**

Methods

We retrospectively reviewed all patients that presented with the International Classification of Disease code for cSDH (432.1;subdural hematoma, nontraumatic) to our institution. Between December 2005 and December 2011 274 patient were admitted for SDH. Of these 21 patents were age = 90 years. Medical records and head computer tomographies (CT) scans were reviewed retrospectively. Patient’s demographics, GCS at presentation, medical co-morbidities, and length of stay, disposition, treatment, radiographic characteristics, and disposition were abstracted.

Results

Twenty-one patients 90 years or older with 24 admissions for chronic SDH were identified. Sixteen patients underwent surgery for chronic SDH; 8 craniotomy and 10 burr-hole craniostomy were performed.

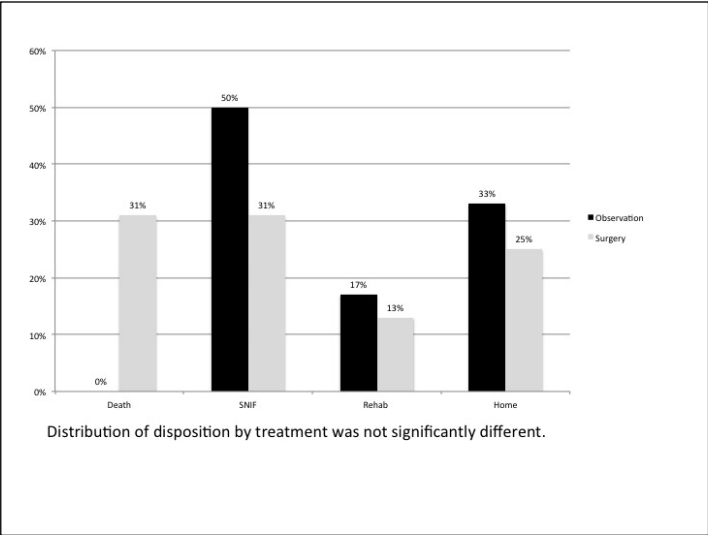
The mean age was 92 (SD=2.52) years.

Size of SDH significantly larger in the surgery group with a median of 20 mm ± 7.8, compared to 13mm ± 5.2 in the conservative group (p=0.03).

Overall mortality rare was 24% (n=5/21) and did not differ significantly by treatment strategy (p=0.202)

Overall 38% patients (n=8) were discharge to a skill nursing facility, 14% patients (n=3) went to inpatient rehabilitation services and **only 24% (n=5) return to home.**

Surgical intervention was performed in 76% patients (n=16) with a total of 18 surgeries. Nearly one third of the patients in the surgical group were sent to hospice or died. None of the patients in the conservative group died and none of them showed deterioration on the GCS at the time of discharge when compared to the GCS at admission. **Overall treatment strategy did not significantly alter outcome** (p=0.208).



References:

1. Borger V, et al. Jul 8 2012. 2. Dumont TM, et al. World Neurosurg. Jun 19 2012. 3. Frontera JA, et al. Crit Care Med. Jul 2011;39(7):1619-1625. 4. Miranda LB, et al. CJ Neurosurg. Jan 2011;114(1):72-76.

Discussion

Chronic SDH are a **sentinel health event for the elderly population**. Although the median admission GCS was 14 76% of patient did not return to home. This shows that even with a minor neurological impairment chronic SDH may unmask underlying medical conditions and exacerbates them (4).

We choose **disposition** as outcome for our study because it is a **relevant factor for families** and relatives of patient with chronic SDH to know. In our study 38% of patients were transfer to Skilled NursingFacility which is a negative predictor for outcome according to Dumont et al. (2) He reported that median survival was shortest for patients discharged to a nursing home (1.5 years) compared to discharge to home (6.7 years).

Mortality was only seen in the surgical group but overall mortality was not different (p=0.202) between surgical or non-surgical management. Supporting our hypothesis that **outcome is poor in this population independent of treatment.**

The retrospective nature of this study places several inherent limitations on the scope of our conclusion. Patients were not randomly assigned to surgical procedure or conservative management. Despite these limitations, we believe this study represents a valid description of the poor outcome faced particularly by patients 90 years with a chronic SDH.

Conclusions: Outcome is poor independent of treatment strategies: surgical or observation. Presentation with chronic SDH in this age group has to be considered a sentinel health event with only 24% of patient returning to home.