Reviewer's report

Title: Hemispheric differences in the surgical outcomes of patients with traumatic acute subdural hematoma

Version: 1 Date: 28 March 2014

Reviewer: Edin Nevzati

Reviewer's report:

Major Compulsory Revisions

Reviewer comments

The authors present a retrospective clinical series of 61 patients treated for traumatic acute subdural haematoma (ASDH, 33 left and 28 right sided). Further the patients were quadrichotomized on the basis of brain contusion as: left ASDH with contusion (n=14), right ASDH with contusion (n=16), left ASDH without contusion (n=19) and right ASDH without contusion (n=12). The aim of the study was to analyze if prognosis for patients with traumatic acute subdural hematoma differs according to the laterality of hematoma. The outcome measures were 90-day mortality rate, frequency of intra- or postoperative brain swelling refractory to treatment, and mean hospital stay. The hemispheric difference in the outcomes was significant only when concomitant brain contusion was present, whereas no intergroup difference was seen in ASDH patients without contusion.

There are several concerns with this submission

1.) The only significant difference in outcome was seen in patients with concomitant brain contusion. It is well known that traumatic parenchymal lesions have an impact on patients outcome. Following variables correlate with outcome: location of the lesion, intracerebral hematoma volume, severity of surrounding edema, timing of surgery, occurrence of preoperative neurological deterioration and presence of acute hemispheric swelling (1). The authors did not compare hematoma volume and location between the two groups, which may have influenced the different mortality rates seen in the two groups. Further it was not defined if intracerebral hematoma was also treated with an evacuation of the lesion, which may also influence patients outcome.

2.) The study focuses on surgical outcome. Apart from 90 day mortality, hospital stay and brain swelling refractory to treatment other outcome parameters would enhance informative value of surgical outcome following treatment for traumatic ASDH. Frequently used outcome scales are: duration and level of impaired consciousness (time to follow commands, sum of errors on the orientation questions from the Galveston Orientation Amnesia Test [GOAT] at discharge from the hospital), functional status and orientation 3 months after injury (assessed with the extended Glasgow Outcome Scale [GOS-e]), postoperative GCS score and GCS score at discharge.

The inclusion of intraparenchymal hemorrhagic lesions in this series, without
specification of volume size, location of the lesion and its operative management, leads to a selection bias and may thereby influence the results presented. In order to assess hemispheric differences in the surgical outcomes of patients with traumatic acute subdural hematoma, only patients without traumatic parenchymal lesions should be included, or hematoma volume and location and operative management should be equally randomized in both lateralities.


**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.