Bilateral chronic subdural hematoma

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Data on bilateral chronic subdural hematomas (CSHs) are scant, including information on the frequency of symptoms, response to various treatments, and postoperative complications, compared with data on unilateral CSH. Bilateral CSHs constitute a fair portion of CSHs, especially in patients older than 75 years and in those with coagulopathy.

Clinical features

The presenting symptoms are those of raised intracranial pressure and mass effect.

The frequency of focal neurological deficits was found to be lesser in patients with bilateral CSDH, and it may confound the diagnosis and delay treatment.

Diagnosis

Computed tomography

Bilateral hematomas may lead to medial compression of both ventricles resulting in a narrow, slit-like elongated ventricle (the anterior horns sharply pointed and approaching one another so called ‘squeezed ventricle,’ ‘hare’s ears sign, or ‘rabbit’s ears’).

Magnetic resonance imaging

Magnetic resonance imaging is a more sensitive modality.
Differential diagnosis

If the lesion is placed more anteriorly and medially, hyperdense in intensity and enclosed in thick capsule, it may look biconvex in shape and can mimic extradural hematoma. This location of the lesion will also displace the frontal horns of the lateral ventricles laterally than medially, as in the present case. To avoid this confusion, if available, magnetic resonance imaging (MRI) would be better than CT in identifying these lesions.

Treatment

see Bilateral chronic subdural hematoma treatment.

Outcome

Mixed high and low intensity in T2WI or low intensity in T1WI is the most predictable factor to show rapid aggravation.

Clinicians must be aware of the higher recurrent rate of bilateral CSDH after burr hole craniostomy.

Case series

2017

Two hundred ninety-one patients with bCSDH were identified, and 264 of them underwent unilateral (136 patients) or bilateral (128 patients) surgery. The overall retreatment rate was 21.6% (57 of 264 patients). Cases treated with unilateral surgery had twice the risk of retreatment compared with cases undergoing bilateral surgery (28.7% vs 14.1%, respectively, p = 0.002). In accordance with previous studies, the data also showed that a separated hematoma density and the absence of postoperative drainage were independent predictors of retreatment.

In bCSDHs bilateral surgical intervention significantly lowers the risk of retreatment compared with unilateral intervention and should be considered when choosing a surgical procedure.

Ninety-three patients with bilateral CSDH who underwent unilateral burr hole surgery at Aizu Chuo Hospital were included in a retrospective analysis. Findings on preoperative MRI, preoperative thickness of the drained hematoma, and the influence of antiplatelet or anticoagulant drugs were considered and evaluated in univariate and multivariate analyses.

The overall growth rate was 19% (18 of 93 hematomas), and a significantly greater percentage of the hematomas that were iso- or hypointense on preoperative T1-weighted imaging showed growth compared with other hematomas (35.4% vs 2.3%, p < 0.001). Multivariate logistic regression analysis showed that findings on preoperative T1-weighted MRI were the sole significant predictor of hematoma growth, and other factors such as antiplatelet or anticoagulant drug use, patient age, patient sex, thickness of the treated hematoma, and T2-weighted MRI findings were not significantly related to hematoma growth. The adjusted odds ratio for hematoma growth in the T1 isoointense/hypointense group relative to the T1 hyperintense group was 25.12 (95% CI 3.89-51.58, p < 0.01).

The findings of preoperative MRI, namely T1-weighted sequences, may be useful in predicting the
growth of hematomas that did not undergo bur hole surgery in patients with bilateral CSDH.\textsuperscript{15}

2013

Huang et al., identified 25 of 98 CSDH (25.51%). The patients with bilateral lesions had a lower incidence of hemiparesis than those having unilateral lesions (p = 0.004). Analysis of the neuroimages revealed significant differences in the presence of a midline shift (p = 0.001) and thickness of the hematoma (p < 0.001).

The mean Markwalder grading score at admission was 1.89 ± 0.66 and 1.64 ± 0.49 in the unilateral and bilateral hematoma groups, respectively (p = 0.010). After a minimum follow-up period of 6 months, the mean Glasgow Outcome Scale was not significantly different (p = 0.060). The recurrence rate of up to 28.00% observed for the bilateral disease was found to be higher than 9.59% observed for the unilateral disease (p = 0.042).\textsuperscript{16}

Case reports

2017

A 72-year-old man with bilateral chronic subdural hematomas was admitted and treated using a YL-1 type hematoma aspiration needle. The treatment was complicated by hemorrhage of the basal ganglia and brainstem. This patient had no history of hypertension. Chen et al evaluated the relevant literature to analyze the causes of cerebral hemorrhage in similar patients.

This case report illustrates that the stability of the intracranial pressure should be closely monitored during the surgical treatment of chronic subdural hematomas, and large fluctuations in the cerebral perfusion pressure should be avoided during the operation. They also propose improvements in the technical details of the operative treatment of chronic subdural hematomas.\textsuperscript{17}

Calcified chronic subdural hematomas are an occurrence rarely seen in neurosurgical clinical practice. And when they occur bilaterally, the radiologic image they present is fascinating, as is the clinical presentation, but their management may be challenging. They have been reported to present with a multitude of neurologic deficits but never with diabetes insipidus, which is described by Siddiqui et al.

Due to the rarity of this pathology, the management protocol is not well defined, though there have been quite a few papers on this condition. This review article gathers information published over the years on this rare entity to suggest a treatment protocol.\textsuperscript{18}

2006

An 81-year-old man suffered blunt trauma to his chest resulting from a road traffic accident. On admission a chest X-ray showed multiple rib fractures but a computerized tomography scan of the head ruled out any post-traumatic lesion. He had a background diagnosis of mild Alzheimer's dementia for which he was being treated with galantamine. He lived a reasonably independent life with his wife and was driving the car himself when the accident occurred. After a fortnight he was discharged from hospital.

Two months later he developed progressive deterioration in mobility. His wife noted an increasing level of forgetfulness and intermittent episodes of confusion. His general practitioner noted a shuffling gait and rigidity affecting lower limbs and made a working diagnosis of parkinsonism. A trial of
Madopar (Levodopa and benserazide: 62.5 mg three times a day for 2 weeks) was given by the GP but this failed to improve the situation and he became virtually bed-bound. He was referred back to the hospital for further investigation.

On admission he was confused and marked rigidity affecting upper and lower limbs was detected. No resting tremor was noted but gait could not be tested, as he was unable to get out of bed. In view of the clinical presentation a computerized tomography scan of the head was repeated which showed bilateral fronto-parietal chronic subdural haematoma (Figure 1a,b). He was referred to the regional neurosurgical centre where he underwent bilateral burrhole drainage. Postoperative recovery was unremarkable and on examination there was complete resolution of previous rigidity affecting upper and lower limbs. He was able to converse normally with his wife and began walking with the aid of a stick by third postoperative day. A week later he was discharged from the hospital having regained his previous level of mobility and independence with activities of daily living. 

5204

75-year-old patient, with deterioration in the level of consciousness.

Ischemic infarct protuberancial right of indeterminate origin in 2008. F

Ischemic heart disease. Coronary stent.

Clinical progressive deterioration. Previously despite sequelae of previous stroke (left paresis), he walked and went out with crutches.

Glasgow 4. Mitotic, reactive pupils.

Markwalder grading score 4: Comatose with absent motor responses to painful stimuli, decerebrate or decorticate posturing

CT scan

Bilateral hematomas in the convexity of 21 mm right and 27 mm left in the axial plane suggestive of subdural hematoma of predominantly frontoparietal distribution. There is ventricular compression.
without deviation of the midline.


