Interhemispheric Chronic Subdural Hematoma
—Case Report—

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Abstract
A 74-year-old male presented with right hemiparesis greater in the lower than the upper extremity. He had no apparent head trauma. He had been treated with anticoagulants for cerebral and myocardiac infarction. Computed tomography (CT) and magnetic resonance imaging demonstrated an unusual combination of subdural hematomas in the interhemispheric space on the left, and the left temporoparietal and right frontotempooccipital regions. The left convexity hematoma was irrigated through a single burr hole. Postoperatively, the size of the left convexity hematoma was diminished and the left interhemispheric subdural hematoma disappeared. However, his consciousness deteriorated, and a second irrigation of the recurrent left convexity hematoma was performed 7 days after the first surgery. CT obtained 3 days after the second operation showed a right interhemispheric subdural hematoma, which diminished spontaneously. The convexity hematoma on the left reaccumulated, and was treated by shunting. His neurological status did not improve, and he died from myocardial infarction 39 days later. Irrigation of convexity hematoma may be effective to treat an associated ipsilateral interhemispheric subdural hematoma.

Key words: interhemispheric chronic subdural hematoma, magnetic resonance imaging

Introduction
Interhemispheric subdural hematoma (SDH) is a rare clinical entity first described in 1940. Only 78 cases have been reported, mostly acute cases involving a collection that becomes evident soon, usually hours, after injury. Interhemispheric chronic SDH is very rare, with only six reported cases usually investigated by computed tomography (CT). We present a case of bilateral interhemispheric chronic SDH with magnetic resonance (MR) imaging findings.

Case Report
A 74-year-old male had suffered from deteriorating gait disturbance since February 1993. He developed right arm paresis in March 1993. He was referred to our department in April 1993. On admission, he had a marked right hemiparesis greater in the lower extremity than the upper extremity. His Glasgow Coma Scale was 14. He had suffered no recent head trauma and had no history of alcohol abuse. He had been taking anticoagulants (3 mg/day of warfarin, 300 mg/day of ticlopidine) for cerebral and myocardial infarction for 3 years. His platelet count was 132,000/mm³, prothrombin time was 13.7 seconds, and thrombo test was 25%.

CT showed SDH in the left interhemispheric space and bilateral convexity area. Since he had been receiving anticoagulant therapy and the hematomas were multiple, instillation of dehydrator and neutralization of warfarin were tried for 10 days. The anticoagulant medication was stopped after admission. MR imaging showed no hematoma absorption (Fig. 1). A burr-hole irrigation of the largest chronic SDH was performed on the left convexity lesion. After surgery, he was able to walk with a frame. CT obtained the day after the operation demonstrated a decrease of the left convexity hematoma and disappearance of the left interhemispheric hematoma (Fig. 2 left). However, 7 days after the operation, his...
consciousness level became worse and right hemiparesis worsened. CT showed recurrence of the left convexity SDH. Hematological studies showed a platelet count of 98,000/mm³, prothrombin time of 13.7 seconds, and thrombo test of 25%. The left convexity hematoma was irrigated again through two burr-holes. Postoperative CT showed decreased density of the left convexity hematoma, but a newly developed interhemispheric hematoma was noticed on the right side (Fig. 2 center). The interhemispheric hematoma of the right side disappeared spontaneously (Fig. 2 right). The convexity hematoma on the left side reaccumulated, and was treated by subdural-peritoneal shunt. Despite these treatments, his neurological condition did not recover, and he died from myocardial infarction 39 days after the shunt operation.

Discussion

The six reported cases of interhemispheric chronic SDH all involved accompanying factors such as alcoholism, oral anticoagulants, Parkinson’s disease, hemophilia B, and minor trauma (Table 1). Brain atrophy and/or coagulopathy may also influence the pathogenesis of the interhemispheric chronic SDH. Only seven cases of traumatic bilateral interhemispheric SDHs have been reported. Our case is the first presentation of non-traumatic bilateral interhemispheric SDH. The SDH of the right interhemispheric space in our case was hyperdense, so may not have migrated from the ipsilateral convexity but was an independent hemorrhage without traumatic episode. The mechanism of the interhemispheric SDH of the right side is not clear. Brain atrophy and/or coagulopathy might be related to this hematoma.

Usually, convexity SDH does not extend into the interhemispheric space. Anatomically, there is a

Fig. 2 Computed tomography scans obtained the day after the first surgery demonstrating the diminished size of the left convexity hematoma and the disappearance of the left interhemispheric hematoma (left), 3 days after the second operation showing the well-irrigated left convexity hematoma and a right interhemispheric hematoma (center), and 24 days after the second operation demonstrating the left convexity subdural effusion and disappearance of the right interhemispheric hematoma (right).
tight connection of the arachnoid trabeculae between the brain and the parasagittal dura, which prevents further extension of hematoma into the ipsilateral interhemispheric space. In the present case, interhemispheric chronic SDH disappeared after irrigation of the left convexity hematoma. Brain atrophy and loose connection between the parasagittal dura and brain might be related to this event. Most patients with interhemispheric SDH have been treated surgically when progressive neurological deterioration occurred. Evacuation of the hematoma by craniotomy has been recommended. Four of the six cases of interhemispheric chronic SDH were managed conservatively. One case was treated by craniotomy and the other underwent trepanation of the interhemispheric chronic SDH. As our case showed, irrigation of the ipsilateral convexity SDH might be effective in cases of combined convexity and interhemispheric SDHs.

References


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<th>Table 1 Cases of interhemispheric chronic subdural hematoma (SDH)</th>
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<td>Present case</td>
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CAG: cerebral angiography, CT: computed tomography, MR: magnetic resonance.
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