



Parenchymal Infarction After Subacute Subdural Hematoma Evacuation: Case Report

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Abstract

Subacute subdural hematomas are among the least diagnosed group among subdural hematomas. Subacute subdural hematomas, defined as isodense on computed tomography examinations, are considered as bleeding lasting for one to three weeks. Although clinical findings are not sudden onset similar to acute subdural hematoma cases, they have a more progressive course compared to chronic subdural hematoma cases. Herein, we report a patient presented with sudden neurological deterioration who developed right hemispheric infarction and hemiparesis in the postoperative period.

Keywords: Subacute subdural hematoma; Chronic subdural hematoma; Subdural hematoma evacuation; Cerebral infarction

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Introduction

Subacute subdural hematomas are the least common type of subdural hematomas. Clinical course is mostly similar to chronic subdural hematomas.¹ Sudden neurological deterioration is rarely seen in these patients. After compression of the cerebral parenchyma, it is very rare for cerebral blood flow to exert such a compression effect as to cause infarction.² Infarct in the cerebral parenchyma occurs because the compression effect of the hematoma cannot be detected in radiological imaging upon initial diagnosis. It may be possible to encounter findings of infarct in postoperative radiological examinations in cases treated surgically. Therefore, surgical treatment as early as possible in patients with a diagnosis of subacute subdural hematoma with sudden or progressive neurological deterioration may help achieve better results. Herein, we present a very rare case with a diagnosis of subacute subdural hematoma and infarct in the cerebral parenchyma in the postoperative period.

Case Report

A 58-year-old woman was evaluated in the emergency department due to sudden loss of consciousness. The patient had mydriasis on the right side, hemiparesis on the left side and Glasgow Coma Score of 8/15. According to the information obtained from his relatives, it was learned that the patient had headaches for a few days and had vomited twice before she lost consciousness on the day she was brought to the emergency department. Cranial

computed tomography (CT) examination revealed a subacute subdural hematoma in the right frontoparietal region, in close density with the cerebral parenchyma, causing a midline shift of approximately 3 cm (Figure 1a). Cranial magnetic resonance imaging (MRI) examination revealed no septation within the hematoma and ischemia (Figure 1b). The patient was operated on urgently, and subdural hematoma evacuation was performed with two burr holes. On the third postoperative day, Glasgow coma was evaluated on a scale of 15, and it was observed that left hemiparesis continued. Cranial CT revealed infarct areas in the right frontal and temporal lobes (Figure 1c,d). The patient was discharged on the eighth postoperative day. Left hemiparesis was permanent in the neurological examination performed at the latest 14th month.

Discussion

Subacute subdural hematomas are the least common case groups among subdural hematomas.¹ Although the clinical course is similar to those of chronic subdural hematoma, faster progression may be observed in these cases. However, they may present with sudden neurological deficits and comatose findings.^{2,3} Sudden neurological deterioration and coma findings in chronic hematomas are mostly associated with the addition of an acute component to chronic hematoma. However, rapid neurological deterioration can be observed in cases that have started to become chronic and are detected in the subacute stage, and whose tolerance to sudden intracranial

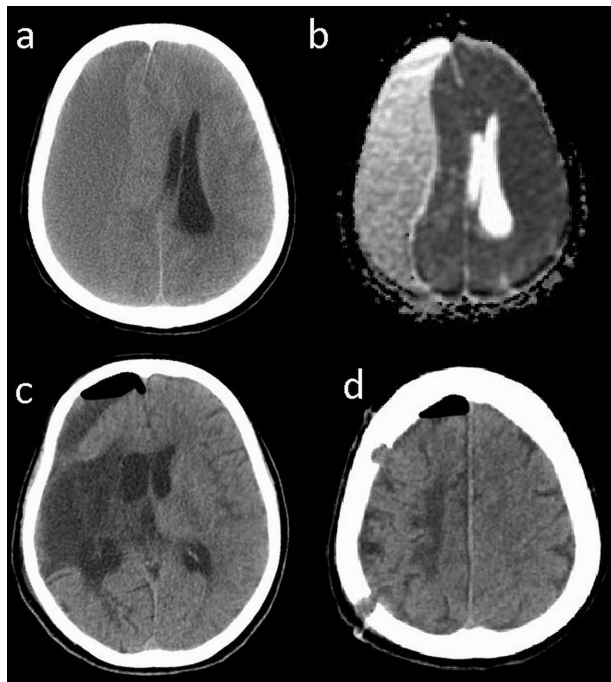


Figure 1. Right frontoparietal large subacute subdural hematoma and midline shift (a). In diffusion-weighted examination, septation within the hematoma and no parenchymal infarction are observed (b). On the CT examination of the 3rd postoperative day, a wide right temporal and partial infarction is observed in the right frontoparietal area

pressure increase is exceeded.¹ The most common finding in patients with chronic subdural hematoma is dizziness due to decreased cerebral cortical blood flow. In patients where the blood flow is blocked for a long time, and infarct sign may occur.² It is known that in patients with infarcts, neurological deficits will not completely recover, and/or partial recovery may occur. In chronic subdural hematoma cases, since the symptoms are long-lasting and progressive, even if the radiological findings are compatible with the signs of progressive intracranial pressure increase such as midline shift, clinical findings may occur with a slower course and milder severity due to tolerance mechanisms.¹ In subacute subdural hematoma cases, tolerance to increased intracranial pressure is lower than in patients with chronic subdural hematoma. Delayed surgical intervention in cases with this type of hematoma may lead to infarcts by disrupting cerebral blood flow.²

It is possible to encounter clinical findings incompatible with radiological findings in chronic subdural hematoma cases with midline shift. For this reason, even if there are radiologically dramatic findings, the relatively mild clinical findings may lead to surgical intervention in patients under elective and/or elective emergency

conditions.¹ It should be taken into account that the tolerance to increased intracranial pressure will be lower in patients with subacute subdural hematoma, and surgical intervention should be performed under more urgent conditions than in cases of chronic subdural hematoma.

In cases of chronic subdural hematoma, disruption of cerebral blood flow due to parenchymal compression can be tolerated for a period of time. However, in subacute subdural hematoma cases, tolerance to the preservation of cortical blood flow due to increased intracranial pressure is lower than in chronic subdural hematoma cases. For this reason, surgical intervention should be considered as early as possible, especially in cases with midline shift even if comatose findings do not occur. Since the use of antiaggregant-anticoagulants should be avoided in order to prevent infarction after surgical intervention, early surgical intervention may provide lower mortality and morbidity rates.

Conclusion

Although the clinical course of subacute subdural hematoma is similar to that of chronic subdural hematoma, tolerance to increased intracranial pressure is lower. In these cases, applying surgical intervention under more urgent conditions than in chronic subdural hematoma cases may reduce the possibility of infarct development.

Conflict of Interest Disclosures

The author has no personal, financial, or institutional interest in any drugs, materials, or devices described in this article.

Ethical Statement

Informed consent form was obtained from the patient.

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