Rapid spontaneous resolution of acute extradural and subdural hematomas

Case report

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The rapid spontaneous resolution of two traumatic acute hematomas, one extradural and one subdural, is reported in a 17-year-old young man. The authors believe that this is the first report of simultaneous resolution of both types of hematoma.

KEY WORDS: acute extradural hematoma, acute subdural hematoma, head injury, spontaneous resolution

Immediate operative intervention is recommended for traumatic acute extradural or subdural hematomas, and thus reports on the natural history of these hematomas are rare. Although rapid resolution of acute subdural hematomas has been reported in some cases,\textsuperscript{3,4,6} that of extradural hematomas is extremely rare.\textsuperscript{1} We recently encountered a patient with an extradural and a subdural hematoma, both of which disappeared rapidly without operation.

Case Report

This 17-year-old young man fell from a height of about 1 m and was transported to a local clinic. He was able to open his eyes and answer questions. A linear fracture of the right occipital bone was identified. Computerized tomography (CT) obtained 1 hour after injury disclosed an extradural hematoma in the right side of the posterior fossa and occipital region and a subdural hematoma in the left frontotemporoparietal region (Fig. 1). The patient's level of consciousness progressively worsened, and he was transferred to our hospital for surgery on February 11, 1991.

Upon admission, the patient complained only of headache, and was free from disturbance of consciousness and neurological deficit. A CT scan obtained 2 hours after injury disclosed reduction in the size of the hematomas (Fig. 2), which led us to treat him conservatively. Repeat CT scans obtained 12 hours after injury disclosed that the hematomas had almost totally disappeared (Fig. 3). Because the patient did not require surgical therapy, he was transferred to another hospital on the day after injury, with no apparent neurological abnormalities. Two weeks later, he was able to resume his usual activities without any complaints.

Discussion

An extradural hematoma is generally thought unlikely to be absorbed. However, spontaneous resolution of subacute or chronic extradural hematoma has been reported.\textsuperscript{2,5,7} Pang, et al.,\textsuperscript{7} speculated that membrane formation, as seen in cases of chronic subdural hematoma, probably occurs in extradural hematoma, leading to absorption of hematomas via the sinusoids. However, very rapid spontaneous resolution of extradural hematomas, as observed in the present case, is extremely rare. Aoki\textsuperscript{1} emphasized the potential for communication between intracranial and epicranial hematomas through a fracture. The mechanism of the early spontaneous resolution in this case might be that the hematoma was forced out of the intracranial region through the fracture line due to the pressure gradient between the venous epidural hematoma in the transverse sinus and the intradural space.

Rapid resolution of acute subdural hematomas has been reported by several investigators;\textsuperscript{3-5} some have
Rapid spontaneous resolution of hematomas

Fig. 1. Computerized tomography scans obtained 1 hour after injury showing an acute extradural hematoma in the right occipital region and posterior fossa and an acute subdural hematoma in the convexity on the left.

Fig. 2. Computerized tomography scans obtained 2 hours after injury. The size of both hematomas has decreased, while the volume of the interhemispheric subdural hematoma arrows has increased.

Fig. 3. Computerized tomography scans obtained 12 hours after injury showing almost total disappearance of both hematomas.

suggested that this is caused by hematomas being exposed to cerebrospinal fluid due to tearing of the arachnoid membrane, while others have attributed resolution to pressure-induced redistribution secondary to brain swelling. The latter view is supported by the results of a study conducted by Polman, et al., using magnetic resonance images. In the present case, CT scans disclosed no signs of marked brain swelling; however, the slight enlargement of the interhemispheric hematoma was redistributed in later scans. We cannot rule out the possibility that the hematomas affected each other. This case is noteworthy in considering the
mechanism of rapid resolution of traumatic intracranial hematomas.

References


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