Subacute Epidural Hematoma Caused By Contrecoup Injury: A Case Report

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Subacute Epidural Hematoma Caused By Contrecoup Injury: A Case Report

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Abstract

A 32-year-old woman presented with a rare case of contrecoup epidural hematoma (EDH) associated with coup EDH. On the 5th day of postpartum, she felled on the floor for a sudden dizziness while making a phone call with the stand posture, and struck the left parietal region of her head on the ground. She was dazed for a few minutes. On admission, she complained of mild postpartum fever and dizzy but exhibited no neurological deficits 10 days after head injury. Skull radiography revealed no linear fracture of the left temporal bone but a subscalp hematoma(4’4cm) at the left occipital. Computed tomography (CT) demonstrated a large EDH(62.8´35.5´40mm) in the right frontal region due to contrecoup injury. CT, taken 2 days later, revealed no enlargement of EDH. An emergent evacuation of the enlarged coup EDH was performed, but the patient refused the surgercal operation. This subacute contrecoup EDH was conservatively treated, in the absence of enlargement. She was discharged 15 days after the head injury without neurological deficits. On the 10 months of follow-up, she was still in good health, and the brain CT scan was normal.

Introduction

Usually epidural hematoma locates directly at the head traumas areas, while the contrecoup injury occurs at the counterpoint of the traumas thus causing intracranial hematoma, subdural hematoma, cerebral concussion etc. Acute epidural hematoma caused by contrecoup injury is rare and usually needs operation for optimal management. In the case of subacute epidural hematoma caused by contrecoup injury and received no surgical treatment has not been reported previously.

CASE REPORT

A 32- year-old woman was admitted with subscalp hematoma. On the 5th days of postpartum, she fell down on the floor and struck the upper occipital area without any alteration of consciousness. Within 3 days after head injury, she was alert. The body temperature 100.4 Fahrenheit. At the left occipital a subscalp hematoma(4’4cm) was found while no scratch on the frontal or temporal areas. Fundus examination was normal. The muscle force and tone of extremities were normal. The Babinski’s sign was negative. On admission, she complained of mild postpartum fever and dizziness but exhibited no neurological deficits 10 days after head injury. The CT brain scan showed an epidural hematoma (62.3’28.8’40mm) at the right frontal. The frontal ventricles were distorted and the frontal part of midline shifted to the left. The emergent evaluation was made, but she refused to surgical operation.

In order to confirm the contrecoup trauma, the skull plain X-ray photograph was taken and found no fractures at the frontal. The brain CT scan demonstrated a hematoma(62.8’35.5’40mm) on the right frontal, similar with the initial CT. On the 15th days in hospital, she refused operation and discharged for no symptoms except dizzy. On the 10 months of follow-up, she was still in good health. The brain CT scan was normal.

DISCUSSION

The blood vessels may be ruptured because of skull fracture, transient deform of the skull when the head injured directly by strong force, thus the blood streamed into the space between the skull and epidural regions resulting in forming an epidural hematoma[1]. Contrecoup injury is meant the injury which on the contrary of the direct force to produce a brain concussion, subdural hematoma and intracerebral hematoma, etc.

The subacute epidural hematoma caused by contrecoup injury is rare. The subacute epidural hematoma caused by the contrecoup injury has not been reported previously. The skull plain X-ray photograph demonstrated no fracture especially on the frontal regions. The brain CT scan showed the right frontal hematoma. Therefore the diagnosis of contrecoup epidural hematoma could be established. In our case the location of hematoma was the same as that of subdural one, but on the counterpoint of direct brain trauma.
Three days following the head trauma, the patient was a little dazzled and mild fever. But the fever might be one of the important sigh of brain hematoma. This might be leading to a misdiagnosis with the postpartum fever. The mechanism of contrecoup injury might be one of the two hypothesis: firstly, at the monument of the occipital trauma, the brain goes forward and the positive force may insult the frontal part of the brain especially at the edge of the bones. Secondly, when occipital trauma takes place, the occipital bone is still but the brain goes forward therefore produces a negative pressure and forms an epidural hematoma. In our case it was on the 5th day of postpartum, the connective tissue of the body may be loose and easy to be injured. Thus the blood vessels may be easy to be broken when injured by trauma. So we prefer the second hypothesis.

On the other hand, although there was a large hematoma in the frontal with absence of neurological deficits. This may be a result of hematoma located in “silent areas”. Because compensatory volumetric changes have physical and physiological limits, the abilities of the skull's contents to maintain the normal pressure can be exceeded by change of volume when it is too fast or too great. Increased intracranial pressure exert its deleterious effects by distorting and shifting the brain as the pressure gradients develop. In our case the hematoma was large but it may be within the volume limits, therefore produced no neurological deficits. But the intracranial hematoma at the frontal also deserves emphasis, it may creep out of the adjacent foramen forming a transtentorial herniation especially when it happened to the trauma seizure which may raise the intracranial pressure to a very high level quickly.

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