

Case report

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Bilateral asynchronous acute epidural hematoma : a case report

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Abstract

Background: Bilateral extradural hematomas have only rarely been reported in the literature. Even rarer are cases where the hematomas develop sequentially, one after removal of the other. Among 187 cases of operated epidural hematomas during past 4 years in our hospital, we found one case of sequentially developed bilateral epidural hematoma.

Case Presentation: An 18-year-old conscious male worker was admitted to our hospital after a fall. After deterioration of his consciousness, an emergency brain CT scan showed a right temporoparietal epidural hematoma. The hematoma was evacuated, but the patient did not improve afterwards. Another CT scan showed contralateral epidural hematoma and the patient was reoperated. Postoperatively, the patient recovered completely.

Conclusions: This case underlines the need for monitoring after an operation for an epidural hematoma and the need for repeat brain CT scans if the patient does not recover quickly after removal of the hematoma, especially if the first CT scan has been done less than 6 hours after the trauma. Intraoperative brain swelling can be considered as a clue for the development of contralateral hematoma.

Background

Bilateral extradural hematomas have only rarely been reported in the literature [1-27]. Even rarer are cases where the hematomas develop sequentially, one after removal of the other [1,3,6,10,12,14,16-18,21,23,28,29]. Concerning the sporadic reports of such cases, the incidence rate of bilateral epidural hematomas are variable in various studies ranging from 0.5 to 10% of all epidural hematomas [4,9,11,20,28,29]. A frequency of 2% of all the intracranial hematomas has also been reported [8]. Since the reports of sequentially developed bilateral epidural

hematoma have been sporadic, the incidence rate can not be calculated based on the available literature. Among 187 cases of operated epidural hematomas during past 4 years in our hospital, we found one case with such an unusual presentation.

Case Presentation

An 18-year-old male worker was admitted to our hospital after a fall from a 3-meter height. Upon arrival he was completely conscious and without neurological deficit. Four hours after the accident, he started vomiting and his



Figure 1
Initial Brain CT scan of the patient. It shows a large right frontotemporal epidural hematoma with midline shift and a small hemorrhagic contusion in the left temporal. There was no definite sign of the contra lateral hematoma at this stage.



Figure 2
Postoperative brain CT scan of the patient. As can be seen a contra lateral left temporoparietal epidural hematoma had been developed.

consciousness deteriorated. An emergency CT scan was performed and showed a large right frontotemporal epidural hematoma with midline shift and a small hemorrhagic contusion in the left temporal. Although a bilateral frontal diastatic fracture could also be noticed, there was no definite sign of the contra lateral hematoma at that stage considering the quality of the CT scan (Fig. 1). He was transferred to the operating room, while his level of consciousness was deteriorated and his right eye was getting mid-dilated. During the operation, there was significant bleeding from one of the branches of the right middle meningeal artery. During the operation and after the bleeding was controlled on the right side, the brain started to swell. This swelling did not respond to any measures used by our anesthetists. Since after the operation the patient remained unconscious, a new CT scan was performed, postoperatively (Fig. 2). As can be seen a contra lateral temporoparietal epidural hematoma had been developed during this period. Second craniotomy and evacuation of the hematoma on the left side was performed. As was expected, the patient improved postoperatively. Two weeks later, he was completely conscious without any neurological deficit.

Discussion

Bilateral epidural hematomas are rare and even rarer are sequentially developed hematomas especially after removal of the first one.

The reported case draws attention to this old concept that some of the intracranial hematomas may evolve gradually and may not appear in the early brain CT scans of the patients and underlines the importance of the continuous monitoring of the head injured patients.

Some of the possible factors implicated in the development of such delayed hematomas are underlying clotting abnormalities, vascular necrosis due to leakage of enzymes, hypertension, hyperventilation and CSF leakage. These hematomas may occur even in the absence of additional skull fractures, particularly in the case of venous bleeding.

If the course of the patient cannot be completely explained with the brain CT findings, or after initial recovery the patient deteriorates, further imaging should be considered. Another point in the reported case is the importance of the intraoperative brain swelling in the epidural hematomas [30]. This may be the initial sign of the existence or expansion of hematoma in the contra lateral side of the lesion and if the patient does not recover quickly after removal of the hematoma, should be considered as an indication of the need for further brain imaging. In our case, the extension of the diastatic fracture to the contralateral side could also be considered as an

important sign of possible development of the hematoma in the other side.

Conclusion

Bilateral asynchronous acute epidural hematomas are rare, but must be considered in the management of the patients with epidural hematomas. This case underlines the need for monitoring after an operation for an epidural hematoma and the need for CT scans if the patient does not recover quickly after removal of the hematoma, especially if the first CT scan has been done less than 6 hours after the trauma. Unexplainable brain swelling during operation and existence of the fracture line on the contralateral side, can be a clue in this regard.

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Written consent was obtained from the patient for publication of the patient's details.

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