Case Report

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Rapidly resolving acute subdural hematoma. A case report

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Abstract: Rapidly resolving acute subdural hematoma is a rare condition reported infrequently in the literature. A 52 year old man presented with head injury following a road traffic accident. He was drowsy arousable with a GCS score of 13/15. His initial CT brain showed a 0.7mm thick right frontoparietal acute SDH which was managed conservatively. A repeat CT done after an interval of 48 hours showed complete resolution of the Acute SDH with bilateral subdural hypodense collections. He also had associated facial bone and ACF base fractures along with CSF rhinorrhea. Brief review of the literature and possible mechanisms of resolution are discussed.

Keywords: acute subdural hematoma, CSF Rhinorrhea, head injury, rapid resolution

INTRODUCTION

Rapidly resolving acute subdural hematomas are infrequently reported in the literature. A 52-year-old male developed a right frontoparietal acute subdural hematoma after a head injury, which was managed conservatively. Repeat CT done after 48 hours showed complete resolution of the the SDH. Possible mechanisms of resolution and brief review of literature are discussed.

CASE REPORT

A 52 year old man presented about 5 hours following a road traffic accident. His neurological examination revealed a Glasgow Coma (GCS) Score of 13/15, pupils were equal and reacting and there were no lateralizing deficits. CT brain done about 6 hours following trauma showed a right frontoparietal acute subdural hematoma (Ac SDH) measuring 0.7 cm, right sylvian fissure subarachnoid hemorrhage (SAH), ACF base fracture extending to the frontal sinus and bilateral Le Forte II fracture of the maxillae (Fig1).

As the patient was relatively well preserved and the acute subdural hematoma was not causing significant midline shift, he was managed conservatively with antiedema measures. CT repeated 48 hours later showed that the hematoma had completely resolved. There was a thin bifrontal subdural hypodense collection associated with early brain atrophy (Fig 2). Patient underwent open reduction and internal fixation (ORIF) of the Le Forte II fractures on the fourth day after admission. Incidentally patient developed profuse CSF rhinorrhea after the ORIF, which was repaired endoscopically using the transnasal corridor.

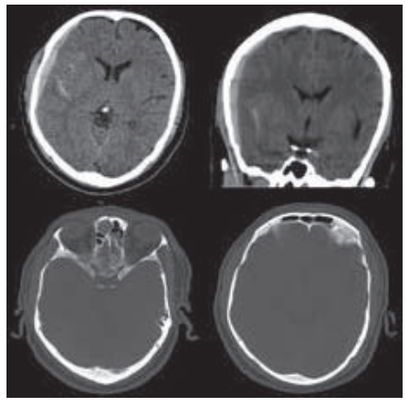

Fig 1: Initial CT scan showing the acute subdural hematoma and the associated ACF base fractures.

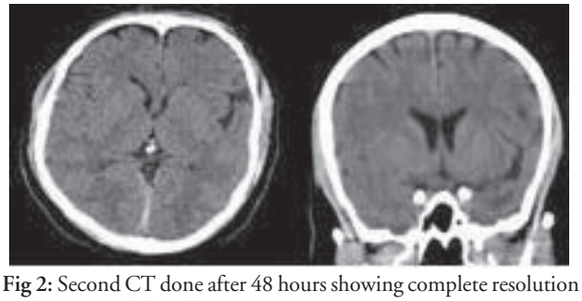

Fig 2: Second CT done after 48 hours showing complete resolution of the acute subdural hematoma.

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DISCUSSION

In a meta-analyses of studies conducted after the introduction of CT scanning Bullock et al., report an overall incidence of acute SDH between 12 and 29% in patients admitted with severe traumatic brain injury, while in a patient population including mild, moderate, and severe head injuries, 11% (360 of 3397 patients) presented with acute SDH[1]. Rapid spontaneous resolution of acute subdural hematoma is infrequently reported in literature. Turkey et al reported on one such patient and reviewed the literature in which they documented 36 previously reported cases, which is probably the largest number of reviewed cases. In this review the earliest resolution time is reported as 2 hours and the longest is 1 week, our patient showed complete resolution in 48 hours[2]. Various mechanisms for the rapid resolution have been proposed in the literature as follows:

1. Dilution of the hematoma by cerebrospinal fluid (CSF) due to tearing of the arachnoid membrane followed by wash out[3].
2. Compression of the hematoma by acute brain swelling followed by redistribution[4].
3. Cerebral atrophy may facilitate accommodation and intracranial redistribution of ASDH[5,6].

In our patient the CT showed SAH which may be an indirect evidence of an arachnoidal tear, suggesting mechanism 1 as mentioned above. The fact that our patient developed CSF rhinorrhea is another strong pointer to an arachnoidal and dural tear thereby strengthening the theory. However the low density band between the SDH and the inner skull vault, as mentioned by Suzuki et al to suggest an arachnoidal tear, was not seen in our case[5].

Our patient also showed early cerebral atrophy identifying with Matsuyama et al., that acute cerebral swelling is not a necessary condition. Elasticity of the brain and absence of cerebral contusion obstructing the outflow of the cerebrospinal fluid is optimal for the rapid resolution[3].

CONCLUSION

According to Bullock et al., a comatose patient (GCS score less than 9) with a SDH less than 10-mm thick and a midline shift less than 5 mm should undergo surgical evacuation of the lesion if the GCS score decreased between the time of injury and hospital admission by 2 or more points and/or the patient presents with asymmetric or fixed and dilated pupils and/or the ICP exceeds 20 mm Hg[1]. Hence to conclude if these above features are absent even relatively sizable SDH (less than 10mm) can be managed conservatively , and their rapid resolution though rare is a well documented phenomenon.

REFERENCE

1. Bullock, M Ross M.D., Ph.D.; Chesnut, Randall M.D.; Ghajar, Jamshid M.D., Ph.D. et al., Guidelines for the Surgical Management of Traumatic Brain Injury: Chapter 4. Neurosurgery March 2006 .Volume 58(3) Supplement: pp S2-16-S2-24.