Two fluid-blood density levels in chronic subdural hematoma

Case report

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The case of a chronic subdural hematoma is presented in which the computerized tomography scan showed two parallel fluid-blood density levels. The authors emphasize the importance of this finding in the management of such cases.

Key Words • chronic subdural hematoma • fluid-blood density level • multiloculation • computerized tomography

It is well known that computerized tomography (CT) can clearly reveal the fluid-blood density level in a chronic subdural hematoma. This is encountered in 5% of such cases. Recently, we managed a patient with chronic subdural hematoma in which the CT scan showed two parallel fluid-blood density levels. The significance of this rare CT finding is discussed.

Case Report

This 88-year-old man had fallen out of bed and hit his head about 2 months previous to his admission to our hospital because of disturbed consciousness.

Examination. On neurological examination, the patient was drowsy but otherwise normal. An emergency CT scan demonstrated a left-sided chronic subdural hematoma with displacement of the ventricles to the right. It also revealed the presence of two fluid-blood density levels in the hematoma (Fig. 1 left). This finding was not appreciated at that time.

Operations. A burr hole was made in the skull, exposing a thick, tough outer membrane. The liquefied hematoma was washed out with saline solution and drained. A postoperative CT scan showed that, unexpectedly, the subdural hematoma was still present (Fig. 1 center). We checked the preoperative CT film again and discovered that there were originally two fluid-blood density levels in the chronic subdural hematoma. At a second operation performed immediately, another thick-walled outer membrane-like structure was found and another liquefied hematoma was drained.

Postoperative Course. The second postoperative CT scan showed that the hematoma had disappeared (Fig. 1 right). The postoperative course was uneventful, and the patient had completely recovered by the next day.

Discussion

Multiloculation is a common finding in chronic subdural hematoma. A type that we commonly encounter is a multiloculated hematoma scattered throughout the hemisphere. However, in the present case, a"multiloculated fluid-blood density level" was observed. To date, only one case of a subdural hematoma showing a multiloculated fluid-blood density level has been reported. In that case, the CT scan revealed three loculated ovoid subdural collections scattered throughout the right hemisphere, two of which demonstrated a fluid-blood density level. In the present case, the two loculations and the corresponding fluid-blood density levels were parallel.
Two fluid-blood density levels in subdural hematoma

The pathogenesis of a multiloculated chronic subdural hematoma is still controversial. This common type of multiloculation is well explained by a hypothesis proposed by Ito, et al.\(^2\)\(^,\)\(^3\) regarding the mechanisms of the chronic subdural hematoma formation: that recurrent slight and copious bleeding within the healing membrane of an acute subdural hemorrhage leads to the formation of chronic subdural hematoma. The sites of multiple bleeding within the membrane coalesce to form a larger hemorrhagic focus, that is, chronic subdural hematoma. If they do not coalesce, multiloculated hematoma is the result.

In our case, the fact that the multiloculated hematomas were parallel cannot be clearly explained by this hypothesis, and the two hematomas might have been formed independently at different times. Although this elderly man had reportedly hit his head only once, we speculate that he might have had another incidence of head trauma. Had the presence of the two levels in the chronic subdural hematoma been noted preoperatively, a second operation would not have been required. We therefore suggest that care be taken to examine preoperative CT scans for two fluid-blood density levels in chronic subdural hematoma.

References


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