SPONTANEUS INTRACRANIAL SUPRATENTORIAL AND RETROCLIVAL SUBDURAL HAEMATOMA FOLLOWING LUMBAR PUNCTURE

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Background

Spontaneous intracranial supratentorial subdural haematoma is a rare condition caused by a disruption of the bridging veins in the absence of cranial trauma. Spontaneous retroclival subdural haematoma is extremely rare and usually it is coagulopathy related. We describe a case of intracranial supratentorial and retroclival subdural haematoma following lumbar puncture.

Case Report

A 45-years old female with long-term oral contraceptive use was admitted to our department experiencing unpleasant paresthesia of lower extremities and left arm. Baseline brain MRI showed white matter lesions. After the diagnostic lumbar puncture she developed acute and persistent postural headache and severe neck pain. There was no history of recent head trauma or use of anticoagulant or antiplatelets agents. Neurological examination was unremarkable. A second brain MRI showed a subdural haematoma on the left fronto-parietal region (Fig. 1; a) and a retroclival subdural haematoma (Fig. 1; c). A chronic left transverse sinus thrombosis was also detected on MRI venography (Fig. 2). No evidence of coagulopathy was found. The patient was successfully managed with conservative means. A two months radiological follow up showed a complete resolution of the supratentorial and retroclival haematoma (Fig. 1; b,d).

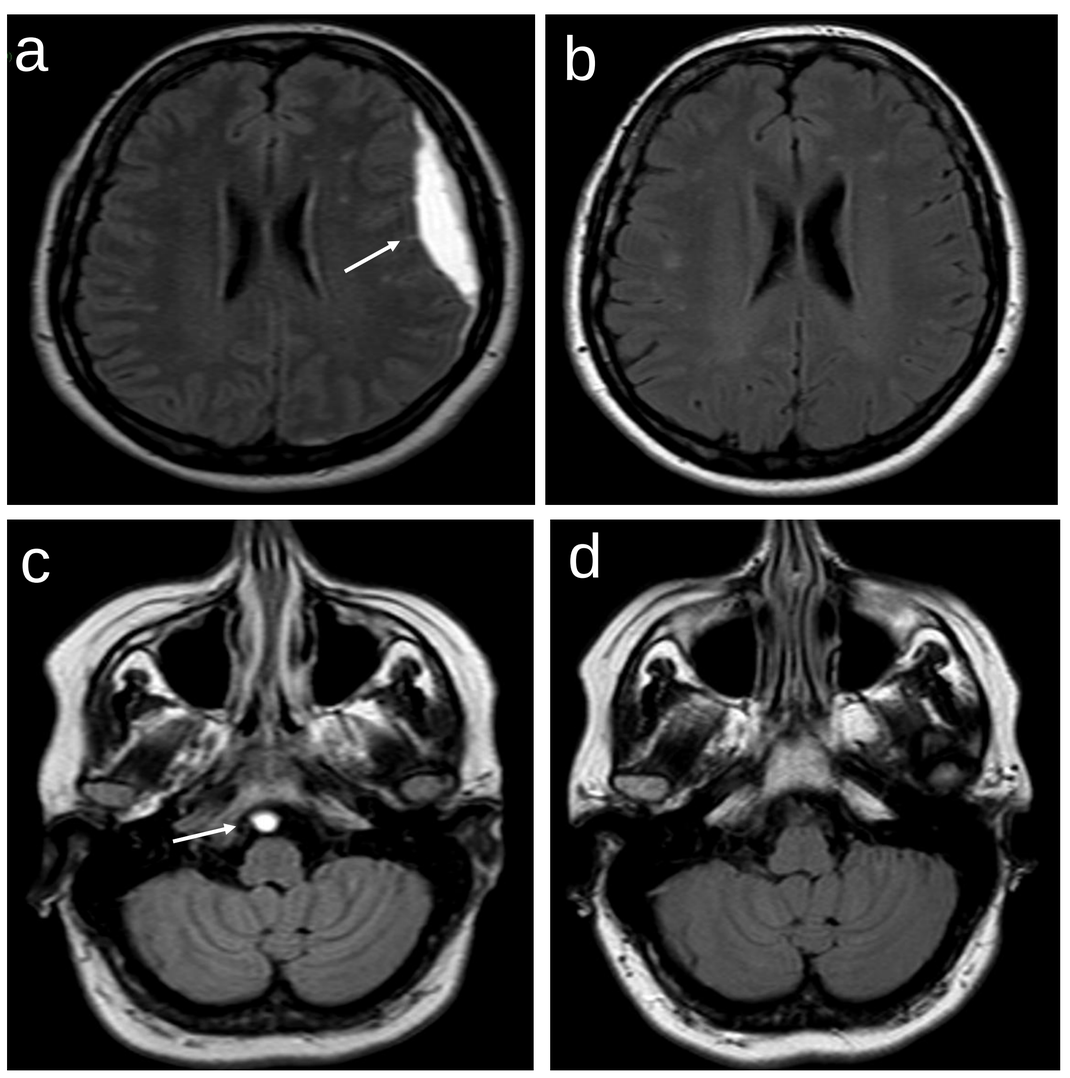

Figure 1. MRI axial-FLAIR images, showing supratentorial and retroclival subdural haematoma at onset (a, c) and two months later (b, d).

Figure 2. MRI venography images, showing left transverse sinus thrombosis.

Discussion

Following lumbar puncture, the leakage of cerebrospinal fluid from the dural hole causes reduction of intracranial pressure and could lead to the stretching of the bridging veins with their rupture (1). Unlike the supratentorial area, the retroclival subdural space is highly protected anteriorly by the clival dura and posteriorly by the anterior pontine membrane. It is relatively bloodless thus explaining the rarity of spontaneous haematoma in this area (2). Alterations in intracranial venous system were observed in patients with intracranial subdural haematoma (3). It is speculated that hemodynamic stress caused by an altered venous outflow due to the cerebral venous sinus thrombosis (CVST) might lead to the collapse of the bridging veins secondary to high back pressure by the obstructed venous sinus (4). We speculate that in our patient the CVST leaded to a chronic stress of the bridging veins in the supratentorial area, in the petrosal group veins and other minor veins near the foramen magnum that collapsed after LP, thus explaining both supratentorial and retroclival subdural haematoma.

Conclusions

Although complications of LP procedure are rare, persistent and intractable headache should be evaluated for the presence of intracranial haematoma especially in patients with a CVST.

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