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Subdural hematoma associated with spontaneous intracranial hypotension: therapeutic strategy and outcome of 35 cases

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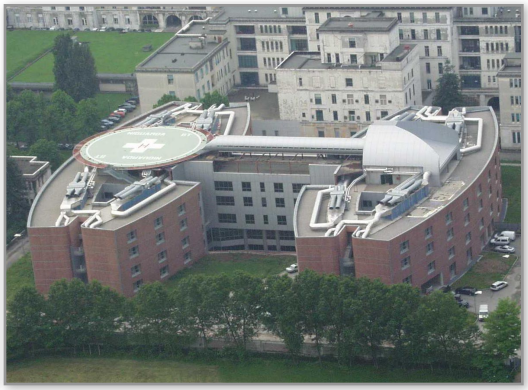

OBJECTIVE

To describe treatment and outcome of subdural hematoma in patients with spontaneous intracranial hypotension (SIH).

BACKGROUND

SIH is characterized by orthostatic headache (OH), low CSF pressure, distinct abnormalities on MRI. Subdural hematoma (SDH) has been reported in 20% - 45% of SIH and uncertainties exist regarding their optimal management.

DESIGN/METHODS

Clinical records and images of 212 consecutive SIH patients observed during 20 years were reviewed. The SIH diagnosis was made according to the ICHD 2nd ed. diagnostic criteria. Were included 35 (16%) patients (6 women, 29 men; aged 33-68; mean, 50 years) with SDH. If OH was not cured by conservative treatment an autologous lumbar EBP using 10–45 mL (mean 33 ± 8 mL) of blood was performed. The EBP was given to 32 patients (one patient performed three and one two EBPs). The surgery was given to 15 patients. Follow-up ranged from 6 months to 120 months.

RESULTS

In 6/35 cases SIH was initially misdiagnosed and the patients underwent SDH evacuation prior to establishing the diagnosis. Three out of these 6 cases presented SDHs with significant mass effect (ME) and clinical deterioration (2 patients had SDH recurrence with additional evacuation). They recovered with prolonged conservative treatment. Other 3 patients presented SDHs without ME and clinical deterioration by SIH (Fig. 1). They had persistent OH, consciousness disturbance (2 patients) and coma (1 patient) after evacuation and received n° 1 EBP (2 pts) and n° 3 EBP (pt with coma) with recovery (Fig. 2).

Among 29/35 cases with SIH initially known, 27 received first EBP; 17/27 recovered; 10/27 had SDH enlarged (1 with SDH without ME recovered, 9 with SDH with ME received evacuation). 2/29 cases with SDH with ME and clinical deterioration received first evacuation and after EBP because of OH persisting . All cases except one had bilateral SDH. All patients recovered.

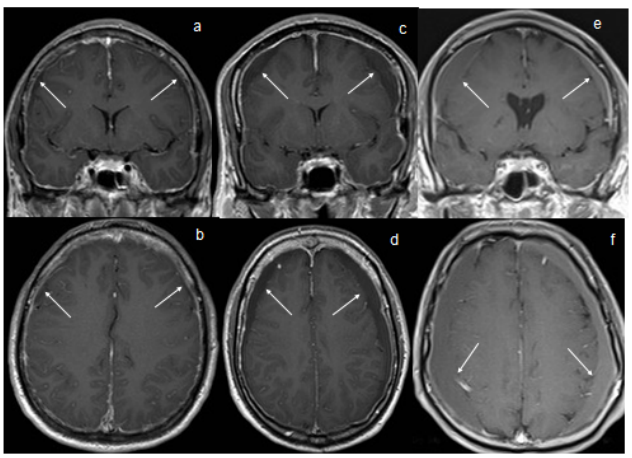

Fig. 1: Coronal, axial T1 post-contrast w.i. showing thin bilateral subdural chronic haematomas without any mass effect (arrows in a, b), with moderate mass effect (arrows in c, d) and bilateral subdural subacute haematomas with severe mass effect (arrows in e, f).

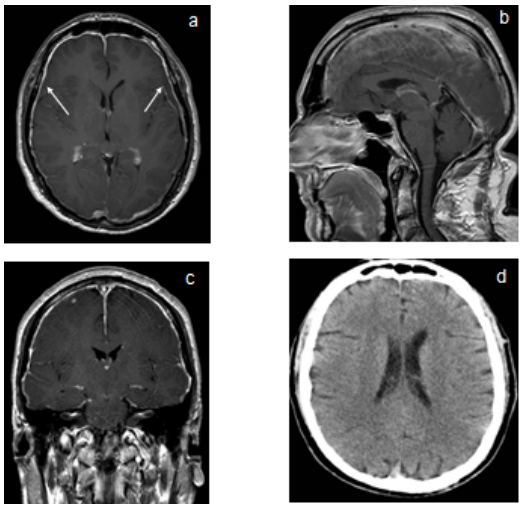

Fig. 2: In a, b, c: axial, sagittal, coronal MRI T1 w.i. post-contrast images, showing diffuse dural enhancement and thin subdural left hemisferic chronic haematoma (arrows in a) at the time of diagnosis. In d: CT scan showing complete regression of SDH.

DISCUSSION AND CONCLUSIONS

SDHs are common in SIH, predominantly in males; if SIH is misdiagnosed and remains untreated with EBP, the risk of SDH recurrence after evacuation is high. Some SDHs can be effectively managed by directing treatment at the underlying CSF leak without evacuation. When SIH is diagnosed first in presence of SDHs without significant ME, it is advisable to perform EBP first and postpone surgery in case of clinical deterioration. When an emergent evacuation is needed due to intracranial hypertension, EBP have to be performed right after surgery, before standing the patient up. This strategy seems to reduce the risk of recurrence due to persistent SIH.

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