NEUROLOGICAL PICTURE.....

Brain abscess formed in the cavum septi pellucidi

Cavum septi pellucidi (CSP) is a developmental anomaly, and its pathological significance is unknown. The CSP and other ventricles communicate with each other, and CSF enters the CSP from the third and lateral ventricles, in which CSF is produced. In this report a rare case of an abscess formed in the CSP is presented.

A 21 year old woman was admitted to the hospital because of fever, vomiting, headache, and confusion. Her temperature was 38°C. Neurological evaluation showed that she was in a state of confusion. Her neck was stiff, and Kernig and Lasegue signs were positive. A lumbar puncture yielded white cloudy CSF. The CSF contained 900 white cells/mm³, of which 85% were neutrophils; the glucose concentration was 20 mg/100 ml and the protein concentration was 100 mg/100 ml. Initial CT and MRI performed on the day of admission showed a CSP in her brain. The CSP was not enhanced by contrast materials (fig 1 A and B). Diagnosis of bacterial meningitis was made. The patient was treated with intravenous administration of piperacillin (8 g/day) and latamoxef (8 g/day). In addition, intrathecal administration of gentamicin (10 mg) was performed once a day for 3 days from the day of admission. On the 4th day in hospital, the patient could respond to simple commands such as grasping. On the 7th day, she could talk with medical staff almost normally, but she was sometimes delirious. On the 10th day in hospital, an EEG showed disturbed basic activity. The dominant rhythm was slow (7 Hz) and poorly organised, without any paroxysmal spikes or sharp waves. Follow up MRI at 20 days after onset showed expansion of the CSP with a high intensity of CSF in the CSP on the FLAIR image (fig 1 C). After the administration of gadolinium, the CSP wall was remarkably enhanced on the T1 weighted image (fig 1 D). A brain abscess was suspected, and the patient was transferred to the department of neurosurgery for stereotaxic operation. The patient continued to receive intravenous antibiotics (clindamycin). The size of the abscess, however, decreased markedly on a CT which was performed on the day of the surgery. The operation was cancelled, and intravenous administration of antibiotics was continued. On the follow up CT on the 74th day the abscess in the CSP had almost disappeared (fig 1 E).

The patient was discharged and is living well without any complication for at least 5 years.

In this case, an abscess was formed in the CSP after the elimination of bacterial meningitis. One explanation for this phenomenon is the slow filling and delayed clearance theory.¹ It seems that purulent CSF filling is delayed and clearance of CSF from the CSP to other ventricles is slow. Some CSPs might be non-communicating, the CSF of which might filter through the septal laminae and be reabsorbed by vessels of the septa.² In this form of CSP, however, purulent CSF would not directly enter the CSP, and it is unlikely that abscess formation or clearance of the abscess would occur. In the case of a communicating CSP, the CSF flow continues and purulent CSF would enter the CSP. Clearance of the CSF would be delayed because of its pouched shape with one entrance. This condition is very rare, and the important point to note is that it would be possible to encounter a case in which an abscess was formed after meningitis during our daily practice. And in this case, medical treatment should be the first choice for an abscess in the CSP when the general condition of the patient permits.

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References

- 1 Abe H, Tsuchida T, Mori S. Empyema of cavum septi pellucidi and cavum vergae: case report. *No Shinkei Geka* 1986;14:1271-4.
- 2 Oteruelo FT. On the cavum septi pellucidi and the cavum vergae. *Anat Anz* 1986;162:271-8.

Figure 1 Enhanced CT and MR images of the patient. (A) CT performed on the day of admission. (B) T1 weighted image on the day of admission. (C) FLAIR image at 20th day. (D) T1 weighted image at 20th day. (E) CT on the 74th day.